THE COURT: Rest?

MR. HANCEY: Your Honor, we rest.

THE COURT: Okay.

MR. MITCHELL: Your Honor, we'll call William Wustenberg. Dr. William Wustenberg.

THE COURT: Okay. Let me bring the jurors in.

(Whereupon, the jury returned to the courtroom.)

THE COURT: And thanks again, folks. Sit down and relax. And, sir, if you'll be sworn, please.

THE CLERK: Please raise your right hand.

WILLIAM WUSTENBERG,

called as a witness at the request of Defendant,

having been first duly sworn, was examined

and testified as follows:

THE WITNESS: Yes, I do.

THE CLERK: If you'll, please, take a seat at the witness stand. Say your name and spell your name for the record, please.

THE WITNESS: My name is --

MR. MITCHELL: Sit down and use the mike.

THE WITNESS: I'll do it in order, then.

William Wustenberg. Last name is spelled W-U-S-T-E-N-B-E-R-G.

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DIRECT EXAMINATION

BY MR. MITCHELL:

Q. Dr. Wustenberg, would you, please, run through your qualifications for us, please?

A. Okay. So I grew up in the fur business. I was a third generation mink farmer in my family on the Oregon Coast. Grew up in family where my mother had a master's in mink nutrition, which is just a little bit of a kind of an obtuse degree, but was surrounded by that as I was growing up. I went to Willamette University, W-I-L-L-A-M-E-T-T-E, in Salem, Oregon. I have a bachelor's in chemistry. Went on to veterinary school and at the program between Washington State, Oregon State and University of Idaho.

THE COURT: Everybody hear back there?

THE WITNESS: Are you okay?

Q. BY MR. MITCHELL: You can move the mike forward just a little bit, too, and it will pick it up a little better. The mike will actually move toward you.

A. Yeah, I'm sure.

I graduated in 1983, and that fall I was hired as the director of nutrition and veterinary services for Fur Breeders Agricultural Co-Op, which is the co-op that supplies mink feed to all the ranchers in Utah and Idaho or most of them that belonged to the co-op. My duties there included doing ration formulation and then providing veterinary

services for all of the 264 farms that were members at that time. And they would frequently either, if they were having problems on the farm, they would call me and I would either go to the farm or they would bring me animals for me to be able to do pathology on them, postmortem exams. And they also generously gave me a budget to be able to use laboratory services to be able to try to figure out what the problems were on those farms. We also had a 750 breeder female research farm that we did nutrition work on, and then we had a laboratory that we did feed quality testing and testing for Aleutian Disease and various other sorted special projects and so forth.

And then in 1985 or '86, it's a little hazy, I moved back home to the Oregon Coast where my family is and the home farm is and participated in the farm, but then also started an animal feeds and nutritional testing laboratory, mostly in that area doing dairy feeds and equine feeds, but also doing make feed analysis, too, mostly for nutritional components, a lot protein and fat and all of that kind of stuff that's in it.

And as I went along, I continued on occasion, not too infrequently, to actually continue to do consulting work for farmers who were having problems around the United States and would hire me to come to their farm or help them figure out why they were having death losses on their farms or if

they could improve production and disease control and so forth.

In 1989 I met my lovely wife, who is from Minnesota. And we lived in Oregon briefly, and then we ended up moving to Minnesota where she's from, as her parents were in ill health, and she was as in most families the one that got tapped, the sibling that got tapped to take care of them. So on that move, I sold my laboratory business, and I actually got hired by a company Pathology Associates International. Their main office was in Fredrick, Maryland, and they did contract toxicology and pathology research for various and assorted clients. And I was hired because they had been -- they had a contract from the Department of the Army to investigate the toxicity of some pollutants that were in the Rocky Mountain Arsenal. Rocky Mountain Arsenal is actually north and west of the old Denver Stapleton Airport. For many years, it was way out in the desert. In 1850s they made sera nerve gas out there. And when they got a bad batch of sera nerve gas, which I made them clarify it wasn't bad enough, they would then supposedly detoxify it. And at that time disposal was an open online pits. They just dumped it out there. It was a desert, it evaporated and the problem went away, except it didn't. One of the compounds had a huge long lifespan of stability in ground water, and it was showing up in wells offsite and so forth.

And so some of the original research that had been done on the toxicology of that compound had actually been done in mink at Michigan State by Dick Aldrich, one of my colleagues. And those studies had been just small little studies to try to just see, is it really bad or is it not so bad? And there were some confusing results and so forth.

So we at PAI were hired to actually repeat most of those studies doing subchronic, you'll probably hear that term again, which happened to be at that time labeled as a 90-day study, a chronic and reproductive trial, and then also to look at exactly how this chemical compound is processed or metabolized by the body and so forth.

So that went on for about two and a half or three years. And in the process -- I actually managed all of those studies, was on site, helped write all of the technical protocols and all of that kind of stuff, and then ended up testifying several times in front of the Colorado State Water Quality Board, in front of the National Science Foundation Committee on Toxicology in an attempt to use our information to establish how much would be considered to be a safe amount to have in the water.

So the EPA and states, for almost all different kinds of contaminates that can be in the water all the way from nitrates in wells to pesticides that might be in there go through this kind of process to establish how much would

actually be considered safe and how much would actually cause toxicity. And those methods have been used for a long time and, you know, definitely work because we have the safest water supply in the world. So we used all of those toxicology risk assessment and methodologies and so forth.

So Desert Storm came along, and the Army ceased all nonessential funding. And that was me. I was nonessential at that point. So I actually got a chance to start into the human medical device industry. I'm not exactly sure why the first company hired me. I jokingly say it's because I could spell FDA. Since that time -- well, I set up a laboratory to do toxicity testing of medical device materials, so everything from Band-Aids to implantable hearts are all made out of plastics and metals and ceramics and things. And one of the steps in the process to actually be able to make sure that those things are going to be okay and get approved by the FDA is to show that they are safe and they aren't going to pose a tocological risk or cause toxicity in patients that use them.

And so I was hired to set up a lab to actually do that testing. I was there for about two and a half years. And then I started my own consulting business.

And since 1997, I've had Alternate MD Consulting. I've done work for in excess of 500 different medical device companies from things as simple as Band-Aids to artificial heart pumps to artificial knees, intraocular lenses,

intraocular treatments for glaucoma, neurologic devices that go in the brain to help if you have hydrocephalus. It's just -- the number is -- I meet people quite often who actually have a product that I in some small way helped make sure it was safe.

But the bulk of my work is actually biomaterials, toxicology. So all of these plastics and all of these metals and so forth have chemicals in them that can actually come out of them into your body after they're put in. And so we actually do analytical work in the testing labs to try to figure out how much of each of those compounds might come out and what they are, identify what they are. And then I get those results, and I compare them with what is in the literature, what's been previously published for all of those chemicals, to try to establish what would be considered a safe exposure limit. And then I can go back and look and see whether the amount that we think might come out of those devices is above that or if it's the order of magnitude, you know, or a lot lower than that. And then we can make some judgments about whether those materials are going to pose a potential risk to patients or not.

THE COURT: Do you have your next question?

MR. MITCHELL: Yes, Your Honor.

Q. BY MR. MITCHELL: Let's back up just a little bit. I want to talk a little bit about your work at the Fur

Breeders Agriculture Cooperative. And when you would get a call from a rancher because they were having a problem on their farm that -- or their ranch that they wanted you to help them out with, what process would you undertake to try and figure out what was going on on their place?

A. So obviously you're on the phone with them when they call. So taking into account the time of the year and the part of the production cycle, if the animal is pregnant or you're in the fall when they're growing rapidly, ask a number of questions. You know, how many animals do they have on the farm? How many of them are they seeing a day dying? What do they see and what do they look like?

Typically what I would do then would be to have them actually get some animals that had either been just deceased or were very sick, and we would euthanize them and get them to my lab so that I would actually do the postmortem exams and start to do some diagnostic work to see if we could figure out exactly what was going on. That information is really invaluable. I would encourage them to actually keep track either on a calendar or whatever how many they were losing a day that they thought so that they could have some idea of what their losses were across time.

And sometimes the pathology work would actually tell you what was going on. You would do the postmortem exams, and if they had an infectious disease you could

recognize, and you could tell them what to do about it pretty shortly. Other times I would actually go visit the farm on more complicated problems and try to figure out what was going on.

Q. When you would go out and visit the farms, what were you looking for when you went out there?

A. All kinds of everything. I mean, general husbandry skills. Getting an idea how they're managing their animals, what kind of pens they have, whether the animals look healthy or not. A lot of times, you know, you would spend some time just walking through and looking at individual animals to see if you could see some that are showing early signs of a disease but haven't actually been identified yet. Talk to the rancher a little about the history of what's going on, get a feel for kind of their past history of health problems and so forth.

You know, if there were samples to be taken, if we suspected that there was -- typically it wasn't feed. But because at that time the Fur Breeders Agricultural Co-Op prohibited people from adding extra ingredients to their feed. So if you were a member of the co-op, you were contractually required to only feed their feed.

Q. Now, the consulting work that you have done on this case, have you done that for free?

A. No.

Q. What is the rate of compensation that you have been paid for your consulting work on this case?

A. 375 an hour.

Q. And is that any different from other consulting work that you do for other entities or individuals?

A. I mean, my standard medical device rates are lower than that. But typically the work that I do for legal cases is much harder and requires a much higher level of performance.

Q. Okay. So, okay. What kinds of materials have you taken a look at in trying to come up to speed on this case?

A. Do you have my report? Because it's got a list and there are so many of them, I can't remember. I'm sorry. I can start. But....

So I've looked at the depositions of Keith and Michael Jonsson. There was a whole set of exhibits that were originally provided. It seems like it was several hundred pages of things, in this case from Keith. I've looked at the deposition of Ed Buschur, the exhibits that were provided with that. I've looked at Jeff Hall's original report and two other of his documents. I think he did an addendum to his report, and then there's one other. Maybe it's his deposition. I've looked at what reports were available from the Utah -- they were a diagnostic lab where they actually took mink in and had them looked at and where they did their

diagnostic work. There was also some mink that was submitted to University of Wisconsin diagnostic lab where they did pathology work, postmortems and exams and so forth. I know there are at least 16 lab analysis reports for lactation feed itself. Some of those may be duplicates, so it's maybe only 14. And then there were other samples of other either National Feeds or fishmeal or so forth that were submitted. So, I don't know, maybe there are 25 or so feed analysis reports and lab reports. And then a number of technical references that include some of those, the Koppang from 1978, Anderson from I think it's 1978 and a number of others.

Q. Have you seen the feed delivery records for the Jonssons in this case?

A. Yes.

Q. And for what period?

A. I think it was provided -- I know it was provided for like April, May, June of 2009, 2010 and 2011, I believe.

Q. Any other materials that you have, that you can recall right now that you've looked at in getting up to speed on this case?

A. Not that I can recall right now. But, you know, it's banker's boxes full of stuff, so I apologize.

Q. Okay. Let's talk about some concepts. Can you explain what toxicology is? What does that term mean and encompass?

A. Right. So literally it's the scientific study of toxins. That's the interpretation. As it's practiced, toxicologists' jobs are to basically investigate the potential for chemical compounds to cause disease or adverse things, bad things to happen to people and animals. And there's environmental toxicologists that are looking at what happens to the environment, too, so it depends on which area of expertise you have. So we also look at the mechanisms by which those chemical compounds actually cause disease. And many times we're asked, often asked to try to establish again how much is too much and how much is safe.

So, you know, the fact of the matter is that all of us today that are in this room have been exposed to potentially toxic compounds. I had coffee this morning. I've been exposed to a carcinogen. If you ate something out of a plastic container, there are things that leach out of that.

THE COURT: Yeah. I'd be interested, counselor, and I'm sure everybody would be, the assignment given to him for the specific work that he did in reference to the stuff that we're dealing with here. Background is interesting, but I think we need to focus.

MR. MITCHELL: Certainly. It's -- I think before we can provide the context for the assignment, I think there are some terms that need to be walked through. But we'll try to keep it a little more focused in getting those terms out,

and that's it.

Q. BY MR. MITCHELL: So how about the term acute? In the veterinary and/or tocological world, what does that term mean?

A. Don't you love the way we throw terms around and expect everybody to understand what they are? Acute means near term, immediate, relatively quickly.

Q. Is there a specific time period that we can reference for that term?

A. Days.

Q. Okay. And what about the phrase or the term subacute?

A. Actually let's go to chronic next, okay?

Q. Okay.

A. And then I'll explain, because subacute and subchronic are kind of just in-between. So chronic -- compounds that are chronic, chronic toxicity is you're exposed to low levels that do a little bit of damage, but they don't necessarily impair you on a daily basis. But the cumulative effect over time will then lead to much more serious disease.

Q. Is there a time period that we can reference for purposes of the term chronic?

A. Yeah. Half a year to years.

Q. So then let's talk about subacute and subchronic.

A. So subacute, I mean, there's some variability in

that definition, but probably -- probably somewhere -- it's longer than acute, actually, and so it's in, you know, a few weeks.

Q. And then is that synonymous with subchronic?

A. No.

Q. What is that?

A. Subchronic is generally considered to be two months, three months, somewhere in that gap between. And it depends on who you talk to, to be honest with you.

Q. How about the term dose?

A. Right. So dose is actually what we've been -- I mean, it's the amount of a chemical compound that you consume and take into your body. And typically in toxicology we refer, we measure that by the number of milligrams per body weight. And because we tend to work in metric, it's per kilogram of body weight per day.

And so as I was getting at a little earlier, toxicology is all about dose because all of us are exposed to low levels of potentially toxic compounds, but they're below a dose or an exposure rate that actually is able to cause any damage at all. And we've been given that wonderful system to deal with those things and not have them cause a problem.

Q. Have you ever heard the saying, the dose makes the poison?

A. Absolutely.

Q. What does that mean?

A. So, I mean, probably the best way to get at that is an example. Most of us have taken Tylenol at one point or another. It's considered to be an extremely safe drug. The Extra Strength Tylenol has 500 milligrams of acetaminophen per tablet. The directions say that if you're above 12 years old ou should take two every six hours, not to exceed six of those in a 24-hour period. If you're below -- and not to continue that beyond 10 days.

So, in fact, Tylenol is actually pretty toxic if you take too much of it. So if you take 10 of those things three times a day and continue doing that for several days, you're actually going to cause liver damage. And if you take a whole bottle of it, you're probably going to die right away, or you're going to survive if you get health care and you're going to need a liver transplant.

So all of these things that we get exposed to, whether it's in the feed or whether we take them willingly or so forth, have some threshold above which they will cause a toxic effect.

Q. Okay. Can you contrast the term dose with the term concentration?

A. Right. And, okay. So, yeah. This is one area where even I have to go back and check myself periodically, too, when I'm doing a lot of the calculations and so forth.

So we measure concentrations of these chemical compounds in, for example, here the feed, and we talk about parts per million usually. So parts per million are one milligram per kilogram of that feed. So if you have one part per million of some chemical in there, if you took everything else out but that chemical, you'd end up with one little milligram of it sitting in there. That's the concentration in the feed.

That translates to the dose that you actually take in by how much you eat. So if you eat only a little bit of this you're only going to get a little bit of it. If you eat the whole bucket of it, the whole kilogram of it, you're going to get one milligram, if that concentration is one milligram per kilogram. Now is that clear?

Q. Thank you. How about the phrase dry matter?

A. This is another one. So most foods and mink feed in particular, wet mink feed, are actually mostly water. And when the mink eat it, they absorb the water and do what everybody does with the water. And the nutrition comes from what they call the dry matter. And it probably comes from the way they actually analyze the nutrients in feed.

So the first thing they do is dry out the feed, get rid of the water, and they actually measure how much is actually in there. And then they grind that stuff up, the stuff that's already dried. And then they an- -- that's what they analyze then.

And so you can imagine that if you have a pound, mink feed, wet mink feed generally is about 60 to 65 percent water and 40 to -- 35 to 40 percent of the actual nutrients that are in there. So mink eat wet feed, and so they actually eat to kind of the total number of calories that they need in a day. And you can estimate them by how much of the wet feed that they eat to how much of the actual dry matter nutrients they took in based off the moisture level of the feed.

Q. Okay. We've heard a little bit about the life stages of a mink during the year. So we have the reproduction, the gestation, the lactation and so on and so forth. Is there -- are there periods during the year where a mink, that the quantity of feed that they will consume will vary?

A. Yeah, absolutely. Typically, they're on a relatively even keel through February, end of March breeding, and then April. Towards the middle part of April when they get to the last trimester of their pregnancy, they actually will start to increase. Same thing is true in humans. But once they start to have their kits and they start lactating, then their nutritional requirements really skyrocket.

So you have a female that weighs a kilogram and a half, she has six kits that weigh about 12 1/2 grams when they're born, which they look about like this. And by the time they're 21 days old, they will be more than 10 times

their original birth rate. And all of that came from their mother's milk. So she had to eat to be able to make up for that.

So that's probably the most critical period for nutritional requirements is during the lactation period, which lasts out to somewhere around 42 days.

Q. Are you familiar with a compound known as nitrosodimethylamine?

A. Yes.

Q. NDMA for short?

A. Right.

Q. And are you familiar with the problems that can arise in mink if they consume certain levels of nitrosodimethylamine?

A. Right.

Q. And are you familiar with what one would expect to see on an acute, subacute and chronic basis?

A. Based off what's in the literature, absolutely.

Q. So let's walk through that. And if a -- if a mink suffers an acute NDMA poisoning, what are the signs that you would expect to see in that mink?

A. Typically they have massive liver failure in their death or relatively shortly. Again, it's depending on how much they're actually exposed to. But, yeah. It's pretty rapid.

Q. And have there been any levels established at which you will see that type of acute NDMA poisoning?

A. Yeah. I think Carter established some of those, and I have the numbers here in my notes here if you want them.

Q. Yeah. Would it help -- do you want to come down and walk through those?

A. Let me just look and see what I've got here.

It's like 58 milligrams per kilogram of body weight is pretty acutely toxic. Within a week you'll see dead mink.

Do you want me to write that? How's your penmanship?

Q. You know, I may not be the best judge of that.

A. Okay.

Q. You're welcome to come down and walk through those numbers. But as you do that, you're going to have to use the mike.

A. So there's a guy named Carter who published an article where when he gave 58 milligrams per kilogram of body weight of this NDMA stuff to a bunch of mink, they started to die within five to seven days. So it's --

Q. Let's put that down as acute.

A. Okay.

Q. Did they do necropsies on those mink?

A. Yes. Yeah, they did.

Q. What did they find on those mink?

A. NDMA is actually quite a potent liver toxin, so it really blows your liver out, basically. It causes necrosis, and changes are pretty ugly.

Q. What's necrosis?

A. Necrosis is cell death. So it causes the liver cells to die. They're not working anymore. It's a bad thing.

Q. And has there been any work done to establish a subacute level where you might see changes in mink that have been poisoned with NDMA?

A. One study that comes to mind is -- not that I'm aware of, actually. The subacute itself, I wouldn't know. I wouldn't classify that.

Q. Okay. And how about chronic?

A. Chronic, yes. So our buddy Koppang from Norway fed mink for 122 days anywhere from .04 milligrams per kilogram per day to 0.17, sorry about the penmanship, milligrams per kilogram per day. And doses -- after 122 days, they didn't see any deaths in these animals. Because of the way the study was set up, they actually took many of these animals, all about 14 of them or 20 of them, at the end of the 122 days, and they did postmortem exams on them and looked to see if they could see microscopic changes of the toxicity. And up to .08 showed no signs of liver toxicity at all in those animals. Animals that had been exposed for the full a little more than the three months at about .13 to .17, depending on the gender

of the animals, showed slight changes in the liver that are pretty typical of nitrosamine toxicity. But these animals looked normal, so they were on their way to a more chronic effect at that point.

Q. Did they pelt all of the animals out in that first portion of the study?

A. No. They retained 20 of these animals, six males and six -- and 14 females. And it's a bit of a confusing study. But they then -- so this would have been in November or December. They then took all of those animals that they were keeping, and they put them on the highest diet. They put them on the diet that had the highest levels in it, and none of them were at these low levels anymore. And then in -- they kept them on the same diet all the way through March where they bred them, and then they whelped them in April and May. So they had their babies in April and May.

Q. Was there any mortality seen at those higher levels in any of the mink that continued on in the second portion of the study?

A. Based off of the way the study reads, the actual males and females themselves did not die that were kept from the original ones.

Q. And were they able to reach any conclusions about any reproductive effects in the mink that continued on through the second portion of that study?

A. Well, unfortunately in this study Mr. Murphy got involved during that period, because one of the things you do is as a scientific principle is if you're exposing animals to this much of something in the feed, you also have another group of animals that are getting the same feed but don't have any of the chemical in them. It's called the control. And that's so that you can try to compensate for other things that might be happening in their world that could cause them to have ill health, and then you can then try to narrow down what changes were only because they were exposed to the chemical compound.

They had significant loss or lack of survival of the kits in both of their controls and in the ones that were on the -- that had been exposed to these higher levels of NDMA. Of the 14 females that bred, 11 of them had kits, and they averaged about 4.4 kits at birth. And then some of those kits died then shortly thereafter.

But again, the same problem was going on across their whole farm, even in the ones that weren't exposed to the NDMA. So it caused our ability a little bit to be able to have a nice clean picture of whether NDMA was actually -- there was something else going on.

I think what we can say is that these animals were exposed from November through March, April and May to levels that had been shown to actually cause liver toxicity in the

females themselves. So these animals were actually having toxicity from being fed this prior to the time that they whelped. And even though they were being fed those levels, it didn't completely wipe out their ability to have kids. I realize it's not the most precise way to do that. They still had kits, and 30 out of those 44 survived to weaning. Many of those kits actually went on to develop tumors and died later because this was actually a study to try to look at the development, the carcinogenics or cancer causing features of nitrosamines.

Q. Are you familiar with histamines?

A. Yes.

Q. And what are histamines and how are they formed?

A. So, well, all of us have little cells inside of us that make histamines. But in this context, any meat byproduct, particularly some forms of fish and so forth, have a high level of the amino acid histidine in them, which is one of the normal amino acids that make up all of our proteins. And under certain circumstances, if during the process of handling those slaughter byproducts they are not cooled sufficiently or right away, actually in some fish for human consumption that happens very rapidly. The histidine gets -- there's an enzyme that actually impacts the histidine. It turns it into histamine.

So most fish byproducts, actually most fresh fish

that we actually eat have some low levels of histamine in it all the time. And we -- it's there. It only is a problem if it gets to high levels that are above what would actually cause toxicity.

Q. What levels are we talking about?

A. Well, the NRC for mink says that normally rations contain between zero and 30 parts per million. There are publications that would indicate that levels as high as mid 70 parts per million actually don't affect the feed consumption and/or growth of mink. So most food poisoning associated with histamines are from eating either fish and/or fish byproducts that have well above 100 parts per million, some of them 3-, 800, whatever, if they've really been messed up.

Q. And if you were to see a mink that has an acute histamine poisoning, what would you expect to see?

A. Typically it's pretty rapid. They vomit profusely. They get diarrhea, and they're just sick like the worse case of flu that you've ever had.

Q. And how about on a chronic basis?

A. Typically, I don't know reports of any chronic -- typically, you know, you'll see -- there is -- when you do a postmortem exam on them, you'll see ones that have been affected. They have a dilated stomach. They've got, you know, changes in the stool that is left inside the intestinal

track and so forth, if they die from it. I mean, typically in those animals, if they survive that initial insult and you can keep them on feed, they come back and are going to be relatively normal.

Q. Okay. What is it that you were asked to do in this case?

A. I was asked to take a look at the information provided and, number one, to try to figure out whether I could determine whether there was anything related to the lactation crumlets that were put into the feed that would explain or would explain why the death losses as claimed by the farmers would have occurred.

Q. Do you want to sit down?

A. Yeah, I would love to. Yeah. Am I done?

Q. For a little bit, yeah.

So how did you go about -- how did you go about completing your task?

A. So first thing I did was dig through all of the piles of stuff and see if I could actually find any of the postmortem exams and pathology reports that might actually tell us from the standpoint of the mink themselves what sorts of changes were we seeing to allow for some clues about what might be causing losses. Based off of the record that I've seen, there were no animals that were actually submitted for any pathology work or histopathology or toxicology workup of

animal themselves during the time that the reproductive period and shortly thereafter. So there's a huge void in information that doesn't exist. The first necropsies were much later in the year, some months later.

Q. And then after you looked for the necropsies and didn't find anything, what is the next information source you looked to turn to?

A. So then I went through the depositions to try to get some description of what it was that was identified as the problem.

Q. And did you find that description that you were looking for?

A. Well, yes, I think I did.

Q. Okay. And tell us the description that you found significant for purposes of your opinions.

A. So -- and according to the testimony of Keith and Michael Jonsson, they started to put the crumlets in the feed somewhere in mid 20s of April, the original deposition said the 28th. And then on the Lehi farm itself, they had older females that had already whelped, they were about two thirds of the way whelped, and about a third of them that were still pregnant and getting ready to have their babies. And most of those were black mink. They have both black and mahoganies, which are a dark brown mink, on the farm.

The way it was described was that on the 2nd, 3rd

of May, somewhere, they noticed that the animals, these females that had not whelped yet or were in the process of whelping were lethargic. They weren't eating. They were having trouble having their kits. They were having dead kits, and kits were not surviving very many days after they had them.

Q. Did they provide any other signs of what they considered to be poisoning from the feed?

A. Not that I'm aware of.

Q. Okay.

A. So the other thing that I think is pertinent is they specifically were asked and answered that all of those animals that had already whelped were normal. They were eating normal. They were in great health. There were no losses, significant losses associated with those animals.

Q. Why is that significant to you?

A. Well, if you're looking for something that's coming in the feed that is causing an impact on the animals where they're really getting sick from it, it wouldn't be typical that it would only affect just those. I mean, you think you would see something in the rest of those animals, either decreased feed consumption or not looking right or something in the rest of the animals.

Q. And was there any other information in the description in the depositions that you found pertinent to

your considerations?

A. That's kind of a broad question.

Q. Let me ask you this, then. Did they -- was there any indication of vomiting in the animals?

A. No.

Q. How about diarrhea?

A. No.

Q. How about cannibalism?

A. Not that I'm aware of, no.

Q. How about -- what was the term you used with regard to the stomach?

A. The dilation of the stomach?

Q. Dilated stomach.

A. Right. So I believe it was in Keith's deposition, he mentioned that he actually did do some postmortems on some mink and that they were not showing dilated stomachs and things that would be relatively typical of -- or really they looked, I guess, normal based off of his --

Q. Was the lack of those signs showing up in the herd significant to you?

A. I've actually known Keith for a long time. I haven't been in touch, you know, for 25 years since I was actually working here. But my impression would be that Keith would have some knowledge of what a normal mink would look like inside when you opened it up and if there were marked

changes, like a dilated stomach or really blown-out livers or anything like, that that he would be able to tell that.

Q. And how about the lack of vomiting or diarrhea or cannibalism, were any of those significant to you?

A. Yes.

Q. From what respect?

A. Well, those would be relatively typical signs of an overdose of histamines. And without having those and without having any changes associated with the stomachs and those sorts of things, I think it helps support the fact that probably wasn't related to histamines.

Q. And were you provided any information concerning the method by which the mixed ration that the Jonssons fed to their mink was prepared?

A. Yeah.

Q. And where did that source of information -- what was that source of information?

A. Well, in the original deposition it was indicated that they had a big mixer and that they get the feed pumped in either every other day during April and then switches over to every day into these big insulated tanks. And the feed is actually pretty close to freezing by the time it gets there, although sometimes it might be as high as 40 degrees by the time it gets there. This is the wet feed. And if you're going to mix something else in there, you can't put it in the

tank because it's got no batter, no agitators in it.

So they would put 100 pounds or two bags of the lactation crumlets into the mixer. They would add in, at that point it was two 10-gallon buckets of water, and then they would pump the rest of it full of feed. And they indicated in the original deposition that the mixer held between 700 and 750 pounds of feed.

Q. Why was the description of their mixing process important to you?

A. Well, if you've got a certain amount of histamine or nitrosamine in the lactation crumlets and it's only a certain portion of the whole feed because you're mixing it with the wet feed that doesn't have it in it, it will dilute out the quality that is in there. And what the mink actually get fed is a mixture that is this wet oatmeal kind of consistency stuff that is then the mixture.

So if you're going to calculate how much those animals got on a daily basis, you need to understand the actual concentration of either the NDMA or the histamine that is in the actual feed as it was put in the pen and they ate it and then how much of those mink actually ate on a daily basis. That will define the dose. You recall that description.

Q. Did you also consider the quantity of the wet feed that was utilized in to feed the Jonssons' mink during that April-May-June time period?

A. Yeah. So I looked -- trying to just use -- the data that we have is from how much got delivered per day off of their statements from the Fur Breeders Agricultural Co-Op. So if you -- if you take the total amount, April is probably the best month to be able to look at this to actually get how much the females ate because by the end of May, the consumption is actually being -- they've already whelped. The reported problem of their kit survival and lack of reproduction has gone by. So what I did is I totaled up the amount of feed that was actually delivered to Lehi in April, and they had claimed that they had 4,000 breeder females on the farm. Divided it by 4,000. And then I had to take a guess because it wasn't in the deposition. You also have a few males that are left around, too, for breeders. So I assumed that they had pelted at least half of their males, if not more. And, of course, the males aren't where the problem is.

So essentially by that calculation of the wet feed itself as it was prepared, they were feeding somewhere around a little less than a half pound a day of feed, somewhere between .4 to .5.

Q. What was significant about that to you?

A. Well, that allows you then to take the analysis data from the testing that they did. So they had multiple evaluations for NDMA that they sent to various and assorted

labs, in some cases actually multiple samples taken and submitted on the same day. Did I leave my sheet up there?

Actually can we project this?

Q. Yeah.

A. I don't know if you can actually see this or not.

I don't know if that helps or not. I know what it says. Is this still on?

Q. It's on the bottom here.

A. Thank you. All right. So this is just the table of some of the analysis for NDMA that was done. So it was originally analyzed. There was a sample that was submitted to an Adamson Labs in December of 2011. And then there were two samples that were sent in March of 2012. And again, Roger Griffeth, who received, he and the Jonssons split a load that was delivered that by the depositions indicated that it was all from the same batch that had been produced. So we're making assumptions the bags that Roger had after he finished up his production year actually represent what was fed on the Jonsson ranch. I have no reason to believe that's not true. It's just acknowledging some of the areas of the assumption.

So what they did is they --

MR. HANCEY: I just want to stop here for a second. I don't know what this document is, and I can't find it. I'm not sure you referenced it, Hans.

THE WITNESS: This is just a summary table.

THE COURT: Is this an exhibit, Counselor?

MR. MITCHELL: No, Your Honor. It's just a summary of the data that is in the exhibits that are in the record.

THE COURT: Okay.

MR. HANCEY: Well, I object to its use because I have no way of knowing if it's an accurate summary. I've never seen the document for. I don't know what the word, the text is under the chart. I think it's improper to use this.

THE COURT: Why don't you just have him testify as to what he did.

MR. MITCHELL: Okay.

Q. BY MR. MITCHELL: What did you do to prepare?

A. What I did was I looked at the reports with these dates, with these PL numbers in your official record, and I pulled out the actual numbers that were reported for the nitrosamines and put them into a table.

THE COURT: This is your table?

THE WITNESS: Yes.

MR. MITCHELL: This is. Yes, this is a table that he has assembled --

THE COURT: This is a table that he created?

MR. MITCHELL: Yeah. This is a table that Dr. Wustenberg created.

THE WITNESS: Rather than pulling out each of the reports and going through the pages and showing where in the

original reports the data was submitted, I simply summarized it in a table. That's it.

THE COURT: Okay. Go ahead.

THE WITNESS: Okay. So we can try this again?

Q. BY MR. MITCHELL: Yeah.

A. Okay. That's really nice. I have no idea how to use this.

Okay. I can run through this really quick. What they did is they actually tested for -- there's a number of different related nitrosamines here. There's -- and this one is the NDMA. So you drop almost all of the letters, and you end up with NDMA. This is by far the most potent nitrosamine that exists. These are the results in parts per million. The highest levels were 0.22. These other nitrosamines that are present here typically are not looked at very specifically for toxicity. Yes, they can be toxic, but their actual toxicity is what we say on orders of magnitude less than NDMA. So tens to 100 times less potent a toxin.

That's it. That's the reason for it, for me to put this together. So if I'm going to try to calculate how much the mink actually got, I chose the one that had the highest level of NDMA in it or the 0.22 parts per million.

Do you want me to walk through those calculations?

Q. Yeah.

A. Or glaze over?

Q. Did you then use that, was it .22 you said?

A. Yes.

Q. Did you then use that .22 to calculate the dose that the Jonssons' mink would have received on a daily basis assuming that was present in the feed when fed?

A. That's correct.

Q. Okay. So what's going to be the best way to walk through and show how you show your work about how you did those calculations?

A. Probably off of this table.

Q. Okay.

A. I will under full disclosure tell you that these numbers are slightly different than were in my expert report because the numbers have changed. Since that time I assumed that the batch sizes were 700 pounds. I'm told now that the mixer capacity was -- it was 760 pounds. I'm also told that they add 100 pounds of water rather than the two buckets, which would have been 80 pounds, when they were mixing it. And a couple of other assumptions, too. One is that originally is the dry matter method. The numbers look suspiciously like doing it like this, and I felt like this was a little bit easier to explain because it actually gives you exactly the concentrations in the feed as the mink ate it. And I can then take the amount that they ate back to actually what was delivered to the farm.

But these are the specifics of what went into the mixer. So there's 100 pounds of lactation that went into it. Total amount of 760. They added 100 water. And this is the amount of the wet feed from the Fur Breeders Agricultural Co-Op that made up the difference.

So because of all of the NDMA that we're concerned about comes from this 100 pounds and we said that the concentration was 0.22 milligrams per kilogram or parts per million, kilograms is 2.2 pounds. When you convert that to milligrams per pound, you end up with a 0.1 milligrams per pound of feed. So out of 100 pounds times 0.1, you end up with 10 milligrams total that went into this whole batch of 760 pounds.

So if you divide 10 by 760, you end up with 0.0013 milligrams per pound. And then if we convert that back to parts per million, that comes out to be using the milligrams or pounds 2.2 pound per kilograms, you end up with 0.029 milligrams for kilograms at parts per million.

All right. So if I actually pull all of the water out of this, so this is the wet feed concentration right here. If I take all of the water out and I measure the amount that's in just the dry stuff in there, concentration is going to be higher, right? So I have the same amount in this much as a lower concentration. If I take all the water out, I've got the same amount of nitrosamines in this much, it's going to

give you a bigger number.

So on a dry matter basis, just for grams, I went ahead and calculated that, and it's .007. To be able to calculate actually what the mink got on a daily basis I left it in the wet form and I said, okay, this is how much the feed has in it. If they ate 0.45 pounds and a female weighs 1 1/2 kilograms, 3 pounds, give or take, then they would have received or taken in on a daily basis .0034 milligrams per kilogram of body weight per day. And if they ate a half pound, it's .0043. So it's essentially the same number.

Q. Now, are there any issues with using an as-fed basis instead of a dry matter basis for purposes of the calculations that you're doing?

A. Actually no; because in this case, I think this is the most accurate way to do it because I actually correlate this back to what feed was actually delivered to the farm and use that as an estimate. And I use conservative means. This is probably an overestimate of the total amount that they ate just based off of the way that I did it. So some people will say that you should actually do everything on a dry matter basis because it's more accurate because sometimes it has more water in it, sometimes it has less. Actually mink eat to the amount of calories that they consume. So within a range of probably 55 percent water up to 65 or 75 percent water, if you had add more water they just eat for feed. They're getting

the same calories. If you happen -- so if you have a ration and you put it out in front of a bunch of mink and it has a differing water content, they will eat more of the wet feed than they do of the dry feed.

If you add a bunch of fat to that so all of a sudden it has a lot of calories in, it's kind of like a big old donut, they're going to eat less even on a dry matter basis.

So there's other things that could impact it that even if you're doing it on a dry matter basis that you can't take into account. So I thought this was the most appropriate because it actually looked at the real numbers from the feed deliveries.

Q. How do the numbers that we're looking at here compare to the numbers that we find in the studies where we see toxic effects at any level?

A. Let me look here and see. All right. I think this is probably the easiest way to do this. Again I hope we can get this right here.

This is just a summary of data here. It's got a couple other studies that we haven't talked about in it that you may have heard of. So if I assume that Koppang which fed wet feed for 122 days, the levels that did not cause any toxicity were .004 to .008 milligrams per kilogram per day. Over this 122 days, they consumed between 4.9 and

9.8 milligrams per kilogram of body weight. So that's the total amount they would have eaten over that three-month period of time. The way I do my calculations, this the maximum daily exposure rate that I can get.

And the total exposure rate, I should explain this, this five to seven days, so they added lactation crumlets April 28th, April 27th, April 25th, I'm not sure what the date is anymore. And by the first of May, five to 10 days later, probably 10 being generous, they started reporting that they saw clinical signs of acute toxicity if it is related to the feed.

So these animals had only been exposed to crumlets from the day they put them in till the day they started seeing signs, which is about a week. The total amount that they would have eaten assuming a five- to 10-day period was only from .02 to .04 milligrams per kilogram total amount that they would have eaten.

So if I would look at these dose levels and I compare them to what's considered a safe level from the Koppang study, these levels on a daily basis comparing these two are 10 to 20 times less than what was considered safe. And from a standpoint at a total amount that they consume over a period of time if you're looking at accumulative effect, this is almost 500 times less. So the exposure as compared to the Koppang study is markedly less.

Q. If the Koppang study -- were the levels in the Koppang study on a dry matter or as-fed basis?

A. These were on -- actually they reported because -- so what they did is they took fishmeal that was -- some of it had some nitrosamines in it, some of it had more nitrosamines in it, which actually they had allowed to produce those kind of the way that you would have produced them if it was bad fishmeal that you bought, and then they mixed those in to rations and then fed them to the mink. But what they did is they actually weighed how much feed they actually ate every day, which is a lot of work but it's a great way to do the study, because if they know how much is in the feed and they know exactly how much they ate every day, they can calculate. So they reported these based off of the amount or the dose that the animal actually ate over that period of time. So it's -- I mean, it was a really quite -- from that portion of it, it was a well-done study.

Q. Okay. So let's talk about the two Anderson articles that are up there. What were they looking at in the 1978 Anderson article?

A. Okay. So these actually were done in mice. And so, you know, we often do species-to-species extrapolations and so forth. I mean, most of our water, safe water levels are based off of data we get from rats and mice. So it's not unheard of to do those, but you have to be very careful when

you do that. This study was set up, and they had like four or five different groups of mice that they -- that they actually put NDMA in one of those groups into the water, and then they bred them after they had been exposed for 75 days to the compound. And then they looked to see how many litters, how many had kits -- or pups and so forth. There was actually two portions to the study. So they were exposed to -- there was only one group had one dose, and they were administered .02 milligrams per kilogram per pound for 75 days. Their total consumption was about 2 milligrams.

In this study, females actually had birthed slightly more pups than the ones that had never been exposed to any of the chemical compounds. So it was about 9.1 pups per female in the control group and about 9.5 in the group that had been fed the NDMA.

They did report that there was a higher incidence of stillbirths. Out of all the kits, I think it was about 16 pups were stillborn in this group, which was significantly higher than the control group. And then pups that died within the first 48 hours, there were 16 that died in the NDMA group, but there were 13 that died in the control group. So again, it's not a statistical significant difference.

So, I mean, basically if you were just to look at that study in a vacuum, you would say there might be a correlation between the NDMA -- the NDMA that they fed and

stillbirths only.

Q. But we don't look at things in a vacuum, so provide a little bit of context.

A. All right. So if we're just looking at this to kind of complete. So the doses, again, by just comparison back and forth to look at how much we estimated that they got on the Jonsson farm, you know, the dose that they received is five times less than this number. It's about 100 times less when you look at the total amount that was consumed.

So there was some other issues with that study. It wasn't a perfect study. It was -- it had its whoops just like the Koppang study has.

Anderson got involved in another study in 1989. The primary interest was if you're exposed to nitrosamines while you're pregnant and it's not at fetotoxic levels so you go ahead and have the young, will that -- because this is such a potent carcinogen, will that set up those offspring to actually develop tumors? So there have been a couple of nitrogen related compounds that looked like that might be the case.

So they did an investigation, and they included NDMA in this study. And because they were interested in only acute exposure, they actually mixed this stuff into sterile saline, and they gave an IV dose of it once during pregnancy. So in those mice, at either the 16th day of gestation or the

19th day of gestation the first time they tried to do the study they gave them about 34 milligrams per kilogram as a single dose of NDMA. None of those females had any pups.

So it wasn't exactly the way one wanted to run the study because you can't tell if pups are going to get cancer later on if they're not surviving past parturition. So they actually established what they considered to be a maximum tolerated dose, which is the highest level that you can give without actually causing loss of any of the pups from stillbirths or early deaths. And that was 7.4 milligrams per kilogram. A very high dose.

When they gave that IV at either 16 days or 19 days to these mice once, none of the pups died. There was no difference in survival rate or the pups. Interestingly enough, they actually do go on to have a little higher risk of having liver cancer later on, but that's like when they're almost at the end of their lifetime.

You look at the comparisons for safety margins here. For a single dose, you know, like over almost 2000 times less of a dose that these mink got exposed to. And if it's a total dose, you're looking at 185 times less.

So when I walked through this, I said, okay, we've got a 122-day study that established a safe level, but the reproductive study is a little cloudy because of the reason the way the whole study got managed and bad things happened

and it kind of got screwed up. In the Anderson study where you have one test group that was done that shows there might be an increase in stillbirths at this dose, and we're still below that dose. And then we've got this acute study where we give them, quite frankly, really, really high doses of NDMA one time IV and didn't see any fetotoxicity. And we're between hundreds and thousands of times less than this dose.

And I think one of the important things is again is by the time they reported that there was a problem these animals had only been exposed for five to 10 days. So, yes, they fed the feed through June, but the problem that they described is within the first week after they actually put feed in the diet. So I can't make the numbers add up.

Q. Okay. Let's turn to histamines a little bit, for a little bit. Have you done any calculations of the levels of the histamines that were present in the feed that the Jonssons mink consumed?

A. I just happen to have a chart.

Q. Where does this chart come from?

A. I made it up. I summarized the data from the test reports, and then --

THE COURT: We need to make sure that everybody hears, and you need the mike.

THE WITNESS: I'm sorry.

So I again summarized the data straight from the

test reports that were brought in the evidence and then did a similar set of calculations.

Q. BY MR. MITCHELL: So let's walk through the math of those calculations.

A. Just to start, though, a couple of things I want to talk about here.

Q. Well, let's identify the test that you're looking at you've got summarized in here and the methodologies that were used to get those results.

A. Right. So histamine analysis on samples that were identified as lactation in some form or another got done seven times, and you'll see there's a lot of variability here. This stands for Midwest labs. They did histamines on some samples, and it would have been in May of 2011, December 2010. Although it's actually in the assay and it's four parts per million in the feed, this is now the lactation crumlet itself.

Q. Before you move on, what methodology did they use in the Midwest labs?

A. All right. The only thing that they designated here is it was done for LCMS, which stands for liquid chromatography mass spectroscopy, which is why they call it LCMS so you don't have to say that all the time. It's a pretty sensitive measuring tool, but they don't reference any of the official methods for doing this. So there's unofficial and there's official methods, and we'll get to that discussion

here in a second.

In June of 2011, for reasons that are a little unclear to me, they submitted samples that were received by the labs all within a day of each other to Michelson, Eurofins and NSF Surefish. And so presumably these were all from the same sample. Michelson, which uses -- I have to think about this, the American Official Association of Chemists or something like that, AFC is the organization that actually writes exactly how all of the testing that is required by law to be done on our food. So they are the official arbiter of exactly how these tests get done. And these tests have been shown to be sensitive and repeatable, and they reflect accurately how much any of these chemical compounds, in this case, histamine are in the feed.

So Michelson Labs used AOAC methods, and they came up with 24.4. Eurofins, which identified the sample as being lactation plus 24 percent fishmeal, which I'm not quite sure why there's a difference in identification here, but they came up with a 206 value. And then NSF Surefish came up with 442. And again, they labeled it as lactation plus 25 percent fishmeal. These two use the AOAC method. This one is actually interesting, and I had to go look it up because I had never worked with that test before. Because people who have fish, you know, they're out in the Alaskan waters or whatever and they want to make sure they're handling your fish

appropriately so once it gets frozen and you eat it you don't get sick from it, many companies have developed these rapid tests that can be done within an hour or two. Take a chunk of the fish, you mash it up, you run it through their system and you get a number. And there's probably four or five of those out there that are used commercially. There's about four of them. To be able to prove that they work well, what you have to do is take equal samples, run them on your new fancy test and compare it what they get on the official test. And as long as they're reasonably close then you can go ahead and have confidence in the fact.

Histaquant is not used commercially very often. It will underreport like 35 percent of what actually is in some of these samples when it's run like this or it will over report like 365 percent higher, so it's not an accurate assay.

So I have a question about that number. Subsequent to running these, in April of 2012, they ran a couple more, and they're down in single and double digit. This one was done by AOAC by Eurofins, which is the same one that got this in 2011. Again, the samples are identified differently. I don't know why that is. Anyway, there you go.

Q. So is that the data that you used in coming up with your calculation of the concentration of histamine in the feed as fed to the Jonsson mink?

A. Correct. Yeah.

Q. Did you focus on a dose or a concentration?

A. We don't have any good information on dose. We only have information on concentration in the feed from the literature. So I had to focus -- if I'm going to try to do any comparison, I had to focus on the concentration in the feed.

Q. Okay. So you focused on concentration. Walk us through the math that you performed to determine what the levels would have been under the various test results.

A. Okay. Again, I chose the highest one from Eurofins that was done by the official method and for grams I threw in the Histaquant one that was done by NFS Surefish. So this is milligrams per kilogram. 2.2 pounds per kilogram. This is the amount that's actually in a pound. Again, smaller numbers because a pound is smaller than a kilogram. Same numbers here for total batch size and everything.

So again, in a 760-pound batch of feed, this is the total amount of histamine that comes from 206. This is the total amount of histamine in milligrams that comes from a 200 right here. I divide that by 760 pounds. That means the milligrams per pounds are 12 and 26. To get back to parts per million, I have to take it from per pound to per kilogram. Again, doing the 2.2 thing, it comes out 27 parts per million and 58 parts per million in the feed, in the wet feed as it was fed to the animals.

Q. Have you -- based upon your education, training and experience and the materials and information you have reviewed in this matter, have you formed any opinions to a reasonable degree of certainty whether the lactation crumlets caused any harm to the plaintiff's mink?

A. Based off of the information that was provided, all the testing data --

Q. Dr. Wustenberg?

A. Yes.

Q. Before you go there, I just want to know if you have formed any opinions on that subject.

A. Yes.

Q. Okay. And are the materials and information that you have relied upon in forming those opinions the type of information and materials reasonably relied upon by people in your field?

A. Yes.

Q. Okay. So how did you go about reaching the opinions that you have formed?

A. So again, I went through this arduous process of calculating how much the animals were actually exposed to based off of the test reports. Went into the literature to try to figure out what previous work could tell us about how much was too much and how much was safe, so call that a threshold dose, and then compared the numbers.

Q. Okay. And did you -- what are the opinions that you have formed with regard to the lactation crumlets?

A. I have seen no evidence nor have any of my comparative risk assessments up to this point actually indicated that there was anything in the crumlets that would explain the clinical science that was reported on the farm.

Q. And have you reached those opinions to a reasonable degree of certainty?

A. Yes.

Q. Okay. And because you have the opinion that -- I'm sorry. Back up. I've lost my train of thought. What was your opinion again?

A. What was my opinion?

Q. Yeah.

A. I have seen no data presented in the test reports and based off of the comparison in the literature that would indicate that the addition of the lactation crumlets was responsible or contained toxic substances that would be responsible for the clinical symptom syndrome as it was reported by the farmer on the farm.

Q. And even though we see both histamines and nitrosamines and particularly NDMA in these test results that you just walked us through, you still reached that conclusion?

A. Yeah. I say, I mean, going back to my original example, that's the two Tylenol or maybe one or maybe a 10th

of a Tylenol three times a day as opposed to 10.

Q. And have you reached those opinions to a reasonable degree of scientific certainty?

A. Yes.

MR. MITCHELL: No further questions.

MR. MINNOCK: I have no questions, Your Honor. Thank you.

MR. HANCEY: Shall I proceed, Your Honor?

THE COURT: Well, maybe I'll give these folks 15 minutes to catch up with life.

Remember what I told you. Don't talk about the case with anyone. Let's take 15 minutes. We'll be in recess.

(Whereupon, the jury left the court proceedings.)

(Recess.)

THE COURT: I think we're all here. Why don't you bring them in.

(Whereupon, the jury returned to the court proceedings.)

THE COURT: The record will show the jury is present, counsel and the parties.

You may cross.

MR. HANCEY: Thank you.

CROSS-EXAMINATION

BY MR. HANCEY:

Q. Good afternoon, Dr. Wustenberg.

A. Hi.

Q. Now, you stated that you're being compensated for your testimony today; correct?

A. That's correct.

Q. Are you being compensated by Rangen?

A. I believe the insurance company.

MR. MITCHELL: Objection, Your Honor. Move to strike.

THE COURT: We'll strike that.

MR. HANCEY: No objection to that.

THE COURT: Disregard that, ladies and gentlemen.

Q. BY MR. HANCEY: Now, you've testified for Rangen in a different case than this; correct?

A. I provided a deposition.

Q. Okay. And that is known as the Stembridge case; correct?

MR. MITCHELL: Objection, Your Honor.

THE COURT: I don't know what your --

MR. HANCEY: In his CV, Your Honor. I'm asking about one of his qualifications.

THE COURT: Okay. You're asking if he worked for them more than once?

MR. HANCEY: I'm asking him about another case that he testified in.

THE COURT: Oh, simply that he had a connection

with it.

MR. HANCEY: Yes.

THE COURT: Well, to that extent, he may answer, and then let's move on.

MR. HANCEY: Okay.

Q. BY MR. HANCEY: Do you remember the question? Is that the Stembridge case?

A. Yes.

Q. Now, you provided an expert report sort of to summarize your opinions in this case earlier in the litigation; is that correct?

A. That's correct.

Q. Okay. And I'm looking at it here. It's dated January of 2013; does that sound about right?

A. Yeah, I believe so.

Q. Okay. And am I correct in stating that in the summary and conclusions part of your report you state that you couldn't find -- you couldn't identify a definitive cause for why the Jonssons' mink died; is that correct?

A. That's correct.

Q. Now, you stated on direct examination that it would have been nice if the Jonssons had obtained necropsy reports like animal autopsies at or near the time their animals were dying in Lehi; is that right?

A. That's generally standard operating procedure.

Q. But in this case we do have lab reports concerning the feed those mink ate; is that correct?

A. Yes.

Q. Okay. And some of those lab reports show histamines in the feed; correct?

A. That's correct.

Q. And some of them show nitrosamines in the feed; correct?

A. That's correct.

Q. And one of them shows nitrites in the feed; correct?

A. Correct; which, by the way, if you have a fish-based or fishmeal base you will have some level of nitrites naturally.

Q. Have you reviewed the lab report that was performed on the lactation crumlets sample that Rangen has in its possession?

A. You'd have to show me which report that is. I've looked at multiple ones. I don't know whose --

MR. MITCHELL: Your Honor, we're going to have a matter to take up outside the jury at this point.

THE COURT: Okay. Quick recess, folks. Five minutes.

MR. MITCHELL: Your Honor, can we handle --

THE COURT: And you may be excused.

(Whereupon, the jury left the court proceedings.)

MR. MITCHELL: Your Honor, we started down this road when -- I'm sorry, the name escapes -- Mr. Mercer was cross-examining David Brock about the spec sheets, test results and retained samples. And it appears that Mr. Hancey intends to ask Dr. Wustenberg if he has seen a test result from a retained sample that, from an analysis that was performed on a retained sample that Rangen kept as part of its normal operating procedure. Your Honor, that retained sample has never been tested because the plaintiffs have declined our offer to perform that test.

THE COURT: Have you tested it?

MR. MITCHELL: No. It is still sitting in its original container.

THE COURT: Why not?

MR. MITCHELL: Sorry?

THE COURT: I say why not?

MR. MITCHELL: Why not? Because we have, what, 15 test results that have already been done? We offered --

THE COURT: No. If you've got a retained sample, that's exquisitely interesting. But he asked about the existence of a report.

MR. MITCHELL: Right.

THE COURT: If there's no testing, there's no report.

MR. MITCHELL: Exactly. But the implication -- the implication is that Rangen has somehow avoided testing more so than plaintiffs have done.

THE COURT: That's a different question. The question is, did he look at a report on something that was tested?

MR. MITCHELL: Right. But the point is, Your Honor, that both parties have had equal opportunity to perform the testing.

THE COURT: Yeah.

MR. MITCHELL: And there's no way for me to address this in front of the jury, and it's creating --

THE COURT: That's a different question. Is there a different report?

MR. MITCHELL: No.

THE COURT: There's no report at all?

MR. MITCHELL: There's no report at all.

THE COURT: Okay.

MR. MITCHELL: Because neither party has performed testing on the sample despite the fact that --

THE COURT: Let me have him ask the witness the question he wants to ask the witness.

MR. HANCEY: Thank you, Your Honor.

Q. BY MR. HANCEY: Have you reviewed a lab report on a lactation crumlets sample retained by Rangen?

A. For this case?

Q. Yes.

A. Okay. So without having all of the 16 in front of me, I believe that all of those -- actually when it showed the submitter were either Kent Griffeth and/or one of the Jonssons. I am not aware -- I mean, I have to look at each one of those reports that have been provided to me to confirm or deny with 100-percent certainty, but I don't recall anything that was submitted by Rangen.

Q. Okay. Thank you.

That's my question, and then I'll move on.

MR. MITCHELL: Here's the problem, Your Honor. Both sides have had equal opportunity to --

THE COURT: It's a good idea to go test it. By God, why not?

MR. MITCHELL: Because we have 16 test results already done on --

THE COURT: I understand that. But, hey, folks, if you've got a batch and you've got a sample of the batch, it seems that the oddest kind of thing for me why either side hasn't tested the batch. But that's just an observer. That's just editorializing. That's just an old judge who has been sitting here wondering why people haven't tested the damn batch. But that's just me.

Okay. We'll give them another couple minutes and

bring them back in. Stay away from reports. Stay away from samples. Put your questions as to his direct examination.

MR. HANCEY: Can I ask that question, Your Honor?

THE COURT: Pardon me?

MR. HANCEY: Can I ask that question in the presence of the jury?

THE COURT: His answer was as I understood he did not.

MR. HANCEY: Okay. Fair enough. Well, yeah.

THE COURT: That was your answer, as I understand it.

MR. HANCEY: I don't think --

THE COURT: Is that your answer?

MR. HANCEY: That's his answer off the record.

THE COURT: No. Is that your answer?

THE WITNESS: Yep, that's my answer.

THE COURT: Okay. Put your question and let him give his answer.

MR. HANCEY: Thank you, Your Honor.

THE COURT: Two minutes. Check with the jury that they're ready to go, and I'll be back here in a couple of minutes.

(Recess.)

(Whereupon, the jury returned to the court proceedings.)

THE COURT: Sit down and relax, folks. I'm going to give you your exercise this afternoon, so enjoy it.

Put your next question.

MR. HANCEY: Thank you, Your Honor.

Q. BY MR. HANCEY: Have you reviewed any lab test from a lactation crumlets sample retained by Rangen?

A. Not that I'm aware of.

Q. Now, on direct examination, Dr. Wustenberg, you had the opportunity to get up to the board and draw some -- explain your analysis concerning nitrosamine dosages, histamine dosages and so forth. Do you remember that?

A. Yes.

Q. Okay. Now, you also stated, I believe, that your nitrosamine and histamine calculations were based at least in part on the amount of co-op feed the Jonssons received at the ranch during that time frame in 2010; is that right?

A. Yeah. Considering the fact that I used the whole month of April, I think it's a fair estimation, because even as they were adding back crumlets, it still gave me -- I think, you know, that was for the last two to five days of the month, that gave me a rough estimate. And I used a range from something that was pretty high.

Q. But you don't know whether or not the Jonssons used all of the co-op feed during that time period that was delivered to the ranch; correct?

A. Well, if they were throwing away substantial quantities and not reducing the amount the next day or the next two days that was being delivered to them, I have no way of knowing that.

Q. If they didn't use all of the co-op feed that was delivered to them, then your calculations would be incorrect; right?

A. Typically.

Q. Okay.

A. Because typically most mink ranchers don't like to buy more feed than they actually have to. So if they finish up a two or one day, it depends on whether they're getting delivered every day or getting delivered every other day, if they have feed left, then that is one of the beauties of belonging to the co-op is you can call them and have them reduce the amount that they deliver the next time around so that you're not buying hundreds of pounds of feeds.

Q. And I appreciate your speculation. But I'm asking you whether or not you know what the Jonssons did in 2010?

THE COURT: He responded to that. Put your next question.

Q. BY MR. HANCEY: Do you know what they did in 2010?

A. Yes.

Q. Do you know whether or not they used all of the co-op feed?

A. I don't know whether they threw feed out.

Q. Now, did your calculations assume that the Jonssons were mixing one batch of lactation crumlets a day?

A. No. They would make as many batches as they actually needed to be able to feed the mink for that day. 750 pounds would not feed 4,000 females.

Q. Did your calculations of nitrosamines and histamines assume that Jonssons were mixing one batch for each -- so each mink ate one time per day?

A. During April, that's typically what happens. Yes.

Q. Do you know how many times the Jonssons were feeding their mink during April and May of 2010 each day?

A. I know how much feed got delivered to the farm.

Q. But do you know how many times they were feeding their mink each day?

A. If it wasn't in the deposition, then I don't know.

Q. And, in fact, if they were feeding their mink more often than your assumption, then your calculations would be artificially low; correct?

A. Incorrect; because you can't feed more feed than was delivered to the farm.

Q. Now, you expressed concern today that the Surefish lab test on histamine -- you had some concerns about that; right?

A. Yes.

Q. Okay. Now, in your expert report that you provided in this case, you had the opportunity to review that particular report, didn't you?

A. In January of last year.

Q. And it formed part of the basis for your analysis in this report; correct?

A. Right.

Q. You reference the Surefish lab test in this report; don't you?

A. Correct.

Q. And you don't identify any concerns you had in your expert report with that lab test, do you?

A. Well, things have changed.

Q. Okay. Now, Dr. Wustenberg, you've talked today in terms of toxicology; right?

A. Correct.

Q. Okay. Do you have a degree in toxicology?

A. No.

Q. Do you have a degree in veterinary toxinology?

A. I have a veterinary degree.

Q. You're a veterinarian; right?

A. That's correct.

Q. Do you have a degree in animal toxicology?

A. No.

Q. Are you certified as a toxicologist?

A. No. I would note the Food and Drug Administration accepts probably six or seven risk assessments that I do every month or two as official record of work for the safety of medical products that are being officially sold in this country.

Q. I didn't ask you that question. Are you a toxicologist?

THE COURT: That's been asked and answered. Let's move on.

MR. HANCEY: That was nonresponsive, and I'd like it stricken.

Q. BY MR. HANCEY: Dr. Wustenberg, if fish are allowed to spoil before they're made into fishmeal, histamines can form in the fishmeal; correct?

A. Correct.

Q. In fact, you believe that the spoilage of fish is really the only way that histamine can show up in a finished feed product; correct?

A. In a finished feed product. Actually there are certain species of fish where there are low levels of histamine that are going to happen no matter what. So in the typical handling of these fish, unless they're coming right out of the ocean and being refrigerated down to less than 40 degrees, which is typically not the case, most fishmeals you buy if you use a sensitive enough method will have some

histamine in them.

Q. Does your expert report say this, what I'm about to read:

Histamines occur under conditions of wet spoilage as fish byproduct awaits processing in the fishmeal once dried histamines are fairly stable in dried fishmeal products. The only way additional histamine can be produced in a finished feed is after it is returned to high water content and allowed to spoil.

Did you write that?

A. I wrote that, yes.

Q. Are you aware that nitrites can form -- sorry -- that histamines can form in fish when the fish is heated?

A. Yeah. It has a reaction. Basically it's a degradation of the histamine amino acid.

Q. And are you aware whether or not heat is involved in the manufacturing process for lactation crumlets?

A. Well, heat is certainly involved in the production of fishmeal because you have to dry it.

Q. And in the production of the crumlets themselves; correct?

A. But in the crumlets itself --

Q. Is that true?

A. I don't know. I don't know their manufacturing process. But what I can tell you is that heat involved, as

long as there is a bunch of water around still, will perpetuate the development of histamine. In a dry mix, I don't think that's probably going to be the same kind of an issue.

Q. Now, you're aware that nitrosamines can form in fishmeal that has been preserved with nitrites; correct?

A. Actually, it can be formed in those that are preserved with nitrites and those that are not preserved with nitrites, also.

Q. And you are aware that nitrosamines are toxic to mink; correct?

A. Obviously. We had a conversation about that today.

Q. We did. And isn't it true that nitrosamines can have short-term clinical effects on mink?

A. When present in high enough quantities and they eat enough of the feed.

Q. And they can also have long-term clinical effects on mink, as well?

A. Yeah. That's what we talked about, acute and chronic toxicity and the associated levels that would be responsible for that.

Q. Now, you're aware that the lab tests that were done on the lactation crumlets at issue in this case show the presence of not just NDMA but three different kinds of nitrosamines; is that correct?

A. That's correct. Yeah. NDBA and NDEA.

Q. In addition to NDMA; right?

A. That's correct.

Q. And they also show the presence of histamines as we've discussed; right?

A. Right.

Q. Are you aware of any studies that have analyzed the combined health effects of those four substances on mink?

A. Actually that's an interesting question because I thought about that.

Q. Are you aware of any studies?

A. If you look at the Koppang study and you look at the way that they actually made the feed. So they took fishmeal, and they allowed it to essentially degrade, and they helped it along chemically a little bit, to produce several different levels of what they measured was NDMA in the fishmeal that then got incorporated into the diet that went into the feed then got fed to those animals. Because of the way that NDMA is measured and the fact that they were able to produce it in those feeds at those quantities and because of the chemistry involved in the production similarities of NDMA and diethylamine nitrosamine and dibutyl nitrosamine, those are the other two that you are referring to, and most likely histamine, also, had to be present in that fishmeal. They didn't bother to quantify those. But it was based off of an

understanding of how they get produced, they had to be there.

Q. Well, I have the Koppang study with me, and I'm sure you're familiar with it; correct?

A. Yeah. If you're going to start asking about really deep details I'll have to have a copy of it, okay.

Q. Okay. But you're aware that the Koppang study does reference NDMA by name in it, correct?

A. Correct.

Q. It doesn't reference by name the other kinds of nitrosamines that we found in the lactation crumlets, does it?

A. No. But like I said --

Q. I'm just asking if it references them.

A. No.

Q. And it doesn't reference histamine anywhere, does it?

A. No, it does not.

Q. Now, you talked a little bit about the Koppang study on direct examination. The study involved the exposure of nitrosamines to mink; right?

A. Correct.

Q. And in part of the study, they took 14 female mothers, mother mink, and they bred those mink; right?

A. Correct.

Q. Those mink had been exposed to nitrosamines; correct?

A. Yeah. The higher toxic levels.

Q. And those 14 females combined produced only 44 kits, didn't they?

A. That's what was reported in the study, yes.

Q. And by the time of weaning, which was only a couple months after they were born, 30 of those 44 kits remained. The others had died; right?

A. That's what they reported.

Q. They also report, don't they, that by the time harvesting season came around, which would have been around the end of that year, only 23 of the 44 kits still survived; is that correct?

A. Yes; because once they were on feed they were exposed to the feed that had the highest level or toxic levels. And actually those levels went up, because if you read the article, the fishmeal when they originally started incorporating it into the feed at 7.2 parts per million nitrosamine in it, which meant that those animals were being exposed to -- that were exposed to that high level to somewhere between .13 and .17 milligrams per kilograms per day, if you look in there, it states that later on because they had to make new batches of feed and they had the same old batch of fishmeal they were working off of, that actually went up to 7.8. So there was actually an increase across the time of that study of the NDMA exposure from what was already a

toxic dose.

Q. From weaning to harvesting?

A. Actually the females that were selected in November and the six males were put on the toxic level that had been shown to be liver toxic. They didn't continue to feed them the .04 and the .08. They put them all on the high level. So they have been fed the level that in three months had produced liver lesions in the prior group of animals through the first 122 days, and then they bred them, so they've been exposed to that by the time they whelped to, you know, four months worth of that? Five months? And then they continued to feed those kits that were born, the 44 that were born. We don't really know by the time they get to 30. So the 30 that survived the 30 days, they continue to feed them feed that had toxic levels and actually probably higher levels of nitrosamine than were in the original animals, they call them the F-1 or the first generation, that were actually fed.

Q. But I mean, the study at least indicates that the kits per litter of the 14 mothers that were bred was pretty low.

A. Actually, I don't think -- well --

Q. Well, 44 divided by 14; right?

A. Well, if you're going to view that kind of a study in a complete vacuum without taking into account what they commented about in their control animals that had never been

exposed to NDMA during the whole course of the study, then that's a true statement. But you can't do that and actually understand the validity of the data.

Q. Right. There were other animals in the control group that also had some issues.

A. Right. So you can't tell if the presence of NDMA actually caused only a 4.4 kit average out of the 11 that -- you don't know that.

Q. In fact, you can't really rely on this article 100 percent for anything, can you?

A. Actually, yes. Number one, for 122 days if you feed animals between .04 and .08 milligrams per kilogram per day you are highly unlikely to see any significant toxicity. That is an important threshold to understand. The other thing is, as I said in my direct maybe not too clearly, was it didn't cause a frank failure. Okay. So we know that these females based off of -- based off the doses that they were receiving were actually being affected by the toxicity of the NDMA. They still produced 44 kits. So it's not a measure of, you know, was there a 5-percent decrease? We can't tell that. What we can tell is it wasn't similar to the second Adamson study where they gave them 34 milligrams and none of the females mice had any kits.

Q. Right; which shows that as the doses increased, the mortalities increased; correct?

A. And there is a threshold below which it won't have an effect.

Q. Now, you're aware that in early 2010 during breeding season the Jonssons kept all of their mink, they bred all of their mink at the Lehi facility; right?

A. That was in the depositions, yes.

Q. And then after breeding they separated their herd in two parts, half of them going to Cedar Valley; right?

A. Correct.

Q. You're aware that the Jonssons fed the co-op feed crumlet mixture to their mink at Lehi; right?

A. Correct.

Q. While the mink at Cedar Valley ate just plain co-op feed?

A. Correct.

Q. And you're aware that the Jonssons reported all kinds of health issues and death among their mink at the Lehi ranch, the mink that had eaten the crumlets, just a few days after feeding commenced; correct?

A. In the testimony.

Q. Right. That's what the case is about; right?

A. That's my understanding.

Q. Okay. And you're aware that they also didn't report seeing any adverse health effects among their mink in Cedar Valley that didn't eat the lactation crumlets; correct?

A. That's correct. And they also reported seeing no problems in the females receiving the lactation that had already whelped.

Q. The only known difference to you in the Jonssons' ranching practices among the two ranches was insertion of the lactation crumlets into their diet at the Lehi ranch; correct?

A. Will you say that again?

Q. The only known ranching difference between the Lehi and Cedar Valley facilities in the spring of 2010 that you know about was the inclusion of the lactation crumlets in the mink's diet?

A. Based off of the testimony, I believe that's, yeah, as much as I know.

Q. You also understand that the Jonssons shared the same batch of lactation crumlets with two mink ranchers up in Idaho; correct?

A. I'm not aware of that. Well, wait a minute, yes. Right.

Q. Kent and Roger Griffeth.

A. Kent and Roger Griffeth, correct.

Q. You're aware that the Griffeths reported taking their shares of the same batch of lactation crumlets and feeding them to their mink on their two ranches in Southern Idaho; correct?

A. That's my understanding.

Q. And you're aware that they reported, again just a few days after feeding the lactation crumlet co-op mixture to their mink in Idaho the same kinds of health problems and death among the mink at the ranches; right?

A. Yeah.

Q. Do you believe that the experience on the three ranches at Lehi and the two in Idaho, we're dealing with three ranches 150 miles apart, same batch of crumlets, same co-op feed, same health problems and death, same reported clinical symptoms, problems starting about the same time after feeding commenced, similar mortality rates, with the fourth ranch having none of those things and just the co-op feed, do you believe that has no bearing whatsoever on whether the lactation crumlets in this case contained poisons that harmed the Jonssons' mink?

A. First of all, I have to take your word for the fact that they died of the same things as you stated because, first of all, we don't have a clue what they died from. There was no pathology work done. All we have to go on is basically the testimony of losses. There's no accounting of the numbers that were lost in a way that allows somebody like myself to actually understand that it's a concurrent record with the events that are occurring.

Q. Are you suggesting that the deaths and the health effects on the three ranches that fed the lactation crumlets

in with the co-op feed are simply a coincidence?

A. It's possible. Absolutely it's possible. We tested those crumlets for everything known to man.

Q. Over three ranches?

A. Right. And based --

Q. Excuse me. Let me finish my question. Two states, 150 miles apart, only known difference, lactation crumlets. You're saying it was a coincidence?

A. Yeah. It's quite possible that it is.

Q. Thank you.

A. We have no cause of death. We have no evidence to show that the crumlets were related. We've tested every way from Sunday on these things for toxic molds or acidity, all sorts of other things, and have not found a single thing that would indicate that those lactation crumlets contained toxins that would cause that kind of an effect.

Q. Except for the presence of nitrosamines and histamines.

A. They're not present at a high enough level.

Q. Thanks. I have no other questions. Thank you, sir.

THE COURT: Anything?

REDIRECT EXAMINATION

BY MR. MITCHELL:

Q. Dr. Wustenberg, you referenced some time ago in

your testimony that mink will tend to consume feed based upon their caloric need. Can you explain what that means?

A. Yeah. So, I mean, this is true for humans and all animals. If you tend to eat and then you feel satiated, it's because you've consumed a certain number of calories. That's the largest impact of how much we eat and when we feel satisfied.

Q. Okay. And for mink, will the -- because they tend to eat calorically, does the quantity of feed that they change -- or that they will consume change based upon the frequency of the feeding?

A. Actually it probably goes up.

Q. Okay. And -- oh, one final question. Have you been provided with any test results for retained samples of the lactation crumlets from the plaintiffs?

A. No.

MR. MITCHELL: No further questions.

MR. HANCEY: Nothing further, Your Honor.

THE COURT: Thank you, sir. I appreciate your help.

THE WITNESS: Thank you, Your Honor.

THE COURT: And you're next witness?

MR. MINNOCK: Yes. We'll call Richard Hoffman.

THE COURT: Sir, if you'll come forward and be sworn, please.

RICHARD STEVEN HOFFMAN, JR.,
called as a witness at the request of Defendant,
having been first duly sworn, was examined
and testified as follows:

THE WITNESS: I do.

THE CLERK: Okay. Please take the witness stand. State your name and spell your name for the Court.

THE WITNESS: My name is Richard Steven Hoffman, Junior.

MR. MINNOCK: We're having some technical problems. I'm going to go ahead and start. Hans, is that okay if I start while he's fixing that?

DIRECT EXAMINATION

BY MR. MINNOCK:

Q. Can you tell us -- you told us your name. And what's your occupation?

A. I'm what's called a forensic accountant.

Q. Okay. Tell us what a forensic accountant is.

A. A forensic accountant is, I'm a CPA. I'm also accredited in business valuation. And forensic accountants do really types of analyses. I value businesses, so if you wanted to buy or sell a business I'd help you figure out how much the business was worth. I also do damage calculations in settings like this, all types of cases, where I help figure out the damages in a case. And then we do consulting for

businesses, whether it be help and improve profitability or if they're afraid they have some kind of theft, we will trace the dollars and try and figure out where the dollars are leaving the business where they aren't supposed to.

So forensic accountants, I don't do audit work, I don't do tax work. I do damage valuation, damage calculations and forensic accounting investigations.

Q. Okay. And by whom are you employed?

A. By a firm called Lone Peak Valuation Group.

Q. And how long have you been employed by that firm?

A. Since it started. I started Lone Peak with a partner of mine about five years ago, coming up on five years now.

Q. All right. Who were you employed with prior to that?

A. A firm call LECG, which stood for Law and Economic Consulting Group, which was an international consulting, international forensic accounting group.

Q. Can you tell us your educational background?

A. Sure. I'm -- I have a degree in accounting, and then I have a CPA, and then I also have that designation accredited in business valuation.

Q. Okay. Did I retain you in this case to assist me?

A. Yes.

Q. And what did I ask you to do?

A. You asked me to examine and look at damages, the damage issue in this case.

Q. All right. And is my client compensating you for your work in this case?

A. I believe so, yes.

Q. You hope so?

A. I hope so.

Q. Yes. And can you tell the jury what rate that you charge?

A. Yes. I charge there are $375 an hour.

Q. All right. So you've talked about your educational background. Why don't you tell us what other qualifications you have that allow you to opine on this kind of a case.

A. Sure. I've been doing this type of work for about 20 years now. And I started way back with a firm called Coopers & Lybrand, which turned into PriceWaterhouseCoopers, and then I went to LECG. And so I've been doing this work that entire time. And CPAs have to have training every year. All of my training for the last 20 years has been in the area of forensic accounting. I've had the opportunity to -- there's a few organizations, one's called NACVA. They're a few -- they're kind of nerd herds for forensic accountants, and they provide annual training and I've gone to that. And I've even had the opportunity to teach for those organizations a couple of times.

I've taught at the University of Utah where I taught a class on valuation and another one on damage calculations, and then I've had the opportunity to write. I co-wrote a book on damage calculations, and I've written several articles on the right way to do damages, or to measure damages is better said.

Q. Have you been retained in other cases to perform damage evaluations?

A. Yes. Many other cases.

Q. Have you been qualified as an expert in courts before?

A. Many, many times, yes.

Q. Approximately how many cases have you performed a damage appraisal in?

A. I don't know. I mean, I do about -- I work on about 100, maybe 80 to 100 damage calculations a year, all different types. And I've done that for the last 20 years. So a lot of cases.

Q. And do you do it on behalf of both plaintiffs and defendants?

A. Yes.

Q. And approximately what percentage of each?

A. It's pretty evenly split. I get asked that, so we pay some attention to that. So it's pretty evenly split.

Q. So let's start with what you're trying do with a

damage assessment. What are you trying to do?

A. We're trying to figure out how much money the plaintiffs may have lost due to whatever the case happens to be about. And so I'm trying to measure the amount of money necessary to make the plaintiffs whole for any losses that were sustained.

Q. Okay. Now, in this case, have I asked you to render any opinions on whether or not the mink were poisoned, not poisoned, anything with respect to the cause of any mink deaths?

A. No. And I don't know anything about that.

Q. Okay. And I take it you're not qualified to talk about that?

A. That's right.

Q. Okay. So when you get this kind of an assignment, what is the first step?

A. Well, I gather some data. And one of the first things I want to do is I just want to look at the business from a 30,000 foot level, just a big picture of the business. I also want to do some steps to understand the industry a little bit and learn a little bit about the industry.

Q. Okay. Were you provided some documents to review in this case?

A. I was.

Q. Okay. Were you provided all of the financial

records that the plaintiffs provided in discovery?

A. I believe so. Yes.

Q. Were you provided with all of the documents from the American Legends Co-Op, which is the auction firm?

A. Many documents. I assume they were all of them, but I have many of those documents, yes.

Q. All right. And the documents from the North American Fur Auction?

A. Yes.

Q. And the plaintiffs' depositions?

A. That's right.

Q. And the plaintiffs' tax returns?

A. That's right.

Q. And any other financial data that was produced in the case?

A. That's right. As well as the report -- actually the reports that were prepared by Dr. Roberts' deposition testimony by him and by others.

Q. Okay. So why don't we walk through this and talk about, you talked about the 30,000 foot level. So tell us what is involved in looking at that.

A. Well, you can imagine, so the methods forensic accountants use need to apply to a wide range of cases and a wide range of businesses and a wide range of situations. So what I'm really talking about is if you had a business that

suffers a loss, what you would frequently expect is if you charted that revenue out, you'd see a dip when the loss happened. If you think of it if something happened to me and my earnings were interrupted, you could map out how much money I was making and it would take a dip whenever they were interrupted.

We want to take an initial look at a business that way because you also want to consider what's going on in the economy, especially with businesses. Sometimes businesses' revenues go up and down, not because of a loss but just because how business changes.

Q. All right. Did you prepare this chart that we have up here on the ELMO.

A. I did.

Q. Okay. Can you take the microphone and come up here? And let's talk about what we're seeing here. I'll move it up.

A. I think it made it smaller. It's not square, but it's --

Q. Okay. Talk to us about what we're seeing here.

A. So this is a reasonableness test. It's really two different reasonableness tests that I did.

Q. What's a reasonableness test?

A. It's -- that's that test that I was referring to looking at this business from 30 ,000 feet. So just getting

an idea of what's going on in the business over the time period that we're talking about.

Q. Okay. So go ahead and tell us what you did to conduct these two reasonableness tests.

A. Well, I doubt that you can tell what these numbers say, and I don't know that you need to. But what I did was I gathered -- so this column says, black pelt sales. And it's the number of black pelt sales that happened every year. This first year is 2008. That's before anything is alleged to have happened in this case. So I went back, and I got the black pelt sales and I put this whole column, I filled it out by every year of the actual sales before there were any alleged crumlets problems.

I did the same thing with mahogany pelt sales, so that's the total. And then I went and I got the data that we talked about from the auction that has the average sales prices for the pelts, and I multiplied it out. So you can see that this is the total revenue just based on the number of pelts that they sold every year and based on the actual pelt prices that were going on at that time. And so I'm doing this because I need to recognize like other things, like barrels of oil or gold, that as the price of the pelt changes, your revenue can go up or down. It has nothing to do with anything other than the price of pelts. So I needed to account for that.

And so what I did was I said, well, if you go to 2010 and if we just assumed that they would make the average number of pelt sales in the next three years that they had in the previous three years and we look at what the prices were really doing because the prices were going up in 2011, we look at what the prices were really doing, here's how much revenue that they would actually have. So this top number that says $2,112,000. Then I compared it. And I went out and I got the actual revenue that they generated from selling pelts. And in this year it's $2,133,000. So in other words, the actual revenue was more than just my 30,000 foot level. They actually generated more from their sales than I was expecting. And these are in the years after the loss. Now when I did this, I didn't have their 2013 revenue. So I could only do it for the two years.

Q. So you've got those last two -- that last column you've got in parenthesis which usually indicates a negative or a loss. In this case is that to indicate how much more they made than you thought they would?

A. Yeah. Yeah. I was expecting this to be numbers going the other direction. I was expecting the revenue to drop compared to that.

Q. If there was a loss?

A. Right.

Q. Okay. So what did this tell you?

A. Well, this one, this one made me scratch my head. This one tells me there is no loss. There's no loss from 30,000 feet. It would not be fair for me to say that that means there's no loss. That just meant that I needed to figure out and look a little bit closer. I couldn't understand. If there was a big loss I wouldn't expect it to be this way.

And so I looked at it one other way, and that's down here. Everything's the same, except what I did down here is I assumed that think sold pelts at the highest quantity that they had in the three years before that and mapped it out. And again, in this one, there's -- in this one their actual revenue was less than my projected in one of the years, but it was the opposite in the other by more.

And so again, this test made me not understand where there could be damages or this test does not look like a company that's been damaged from 30,000 feet.

Q. All right. Now did I ask you to examine the report of Dr. Roberts?

A. Yes.

Q. Okay. Now, Dr. Roberts, did he prepare more than one report?

A. Yes.

Q. Okay. And when you prepared your report, did you address the first report?

A. Yes.

Q. Okay. And did you make several criticisms of Dr. Roberts' report in that report?

A. I did.

Q. Okay. And in his second report did he adopt some of the changes that you suggested?

A. He made several of the changes that I suggested, and then he undid, some of the things he did adjust.

Q. All right. So what I want to do, then, is I want you to sort of explain to the jury, do you understand how Dr. Roberts achieved his numbers?

THE COURT: Do you want him back in the witness chair?

MR. MINNOCK: Well, no. I'm going to put this chart up and he can go through that. Maybe if I put this up higher we can move that up or back.

A. We could look at sections at a time, too.

Q. Okay. Sections at a time. Okay. So let's start here up at the top.

THE COURT: Maybe you can identify the chart in some way.

Q. BY MR. MINNOCK: Yes. Is this the chart that you prepared?

A. Yes.

Q. And does this chart simply show your understanding

of how Dr. Roberts did his damage assessment?

A. Yes. I've recalculated it.

Q. Okay. So basically a one-page snapshot?

A. That's right.

Q. Okay. Now, again, some of the numbers that you used came I guess from the first report?

A. That's right.

Q. And so some of these numbers may well have changed in the interim?

A. And I believe I updated it for the second report, but I believe as I understand it they may have changed yet again.

Q. Oh, he had some additional changes here at trial, and the report has not been updated for that.

A. That's right.

Q. Okay. So at least this helps us understand the analysis.

A. (Witness indicates by nodding head up and down.)

Q. All right. So there's three separate categories that he's effectively talking about. The first one is, pelts not taking to market.

A. That's right.

Q. Why don't you explain to us what you understand that to be.

A. I think of pelts not taken to market, that's just

the number of mink that he says weren't born that should have been born. So they couldn't be taken to market because they were never born.

Q. Why don't we actually use this chart because -- what's the red on this chart?

A. The red are the specific parts of his calculation where I think that he's made a mistake.

Q. Okay. Okay. So then let's go up to the top and talk about this pelts not taken to market. Now, did you have a criticism about the way he did it in his first one in terms of whether he should have used a confidence interval?

A. Yes.

Q. Did he have a confidence interval in his report?

A. Yes.

Q. And did he suggest he put one in?

A. Yes.

Q. And did he put one in?

A. Yes.

Q. So tell the jury what you meant when you said -- Okay. Tell the jury what you mean by a confidence interval.

A. That's just a statistical term that all it represents is whenever you're trying to measure something that changes for a lot of reasons, you build a confidence interval. And you're saying, look, any changes inside this confidence interval, who knows what has caused those. That's the

ordinary stuff. If I was to write down what time you show up to work every day, it's probably not the exact same minute. I know at my shop some of my employees sometimes they show up at 7:30, and sometimes they show up as late as 8:30. And then there's others who are over there between 5:00 till 8:00 and 5 after 8:00. And that range that you'd say is effectively a confidence interval.

And that's when you're trying to measure the number of kits that are born to a mink, you've got to account for the fact that they don't all have the exact same amount, so you've got to figure out a range within which it is just a fluctuation in the number of minks -- number of kits per mink.

Q. So if a given year falls within a 95-percent confidence interval -- let me make sure I understand this. When you say a 95-percent confidence interval, does that mean that you expect 95 out of every 100 to fall within that range?

A. That would mean if you're guessing the number of the size of the litter or the number of kits per mink, you'd be right 95 percent of the time, is what you would expect.

Q. And so in 5 percent of the time it may fall outside of that.

A. That's right.

Q. And if you expand that and you say 85-percent confidence interval, then you're less confident because you're opening up a broader range?

A. That's right.

Q. Okay. So in your mind is the 95-percent confidence interval concept a sound one?

A. Yes. Especially for something where you're trying to predict the number of kits born or the number of any herd size, I mean, the number of animals born you would use a confidence interval.

Q. All right. So anything that falls within that 95-percent confidence interval would be considered a, quote, normal year?

A. That's right. Yeah. You could have -- if you think of almost anything we do in that regard. If you have a garden and you're growing vegetables, you don't know exactly how many tomatoes you're going to get off a plant. It's going to be within a range. So anything that happens within that range, it might be a good year or a bad year, but in that range is not damage. That's the normal fluctuation in the number of litter size.

Q. Okay. Now, you had a couple of red dots up here. And can you just briefly explain what the red dots were which indicated that you had concerns with Dr. Roberts' conclusions?

A. Well, yes. He didn't account for all of the mink, so his calculation of the mink size was wrong because he forgot about the live auction sales. He measured -- once he calculated, he's measured damages not from the amount that he

says is the shortfall to the lower end of the confidence interval, but he's measured it at a higher amount. So in other words, he's not -- he's calculated what range is a normal variance or what range is a normal change, but then when he went to measure damages he ignored that calculation.

Q. Okay. So let me make sure I understand. First, though, on live sales, that's including the live sales into the number to determine the kits per litter?

A. That's right. When he was tallying up the kits he forgot those.

Q. Right. And we had a lot of discussion about that the last couple of days, so I don't want to go through all of that again.

But let's talk about the second component. So you have a confidence interval, which I think, let's take the mahogany mink. The confidence level was 4.5 to 6.6, and the median was 5.5; is that right?

A. Yes.

Q. Okay. So how did Dr. Roberts calculate damages, and what is your criticism of that?

A. Well, what he did was once he calculated a number that was outside, so he said, hey, these mink have had too few kits, he had to figure out how many kits were missing, how many too few. And so he measured from the amount that they had all the way to the middle. And what he should have done

was measure from the amount they had to the bottom end to the point that he would have said, that's just the normal variance. That's just a down year.

Q. So if the 95-percent confidence interval was bracketed at 4.4 and 6.6 with an average of 5.5, if the particular year in question was, say, 4.1, in your mind what would be the appropriate number of kits, the difference between 4.1 and what?

A. 4.1 and 4.4.

Q. What was his?

A. He went from 4.1 to 5.5.

Q. Okay. All right. Now, let's talk, then, about the second category. Let's see. Is this -- this is our second category.

A. We just talked about that.

Q. We just talked about that. Okay. So now let's talk about market price, which is the second category. This is pelts taken to market. And why don't you explain to us the analysis that Dr. Roberts did and that you understand he did.

A. What he did was he took -- so on the sheets that we have it listed every category of mink that was sold, and it listed the price that was received and it listed the market price. So what he did is he multiplied those out and looked at the total and said, we didn't get, "we" meaning his plaintiff -- the plaintiff, the plaintiff didn't get as much

money as if they would have sold everything at market price. And then he said, he thinks the plaintiff would have actually sold it at more than market price. And so he made an upward adjustment and said, they should have sold it at more than market price, and they actually sold it at a little bit less. So he's claimed that as damages. The difference is damages.

Q. And as I recall, he said that historically the Jonssons have been .61 above the market?

A. That's right.

Q. And their performance in 2011, was 1.some-odd percentage, 1.85 or something below that average.

A. That's right.

Q. So he measured the difference between those two numbers.

A. That's right.

Q. All right. Did you do an investigation into what actually goes into the auction price?

A. I did.

Q. What goes into the auction price?

A. Well, the different categories, you've got different categories, and so size, I mean, those categories reflect the characteristics of each of the mink that are being sold. And so I have all of the specific categories, and I traced all of that detail and mapped all of that out.

Q. Okay. So size is a category?

A. Yes.
Q. Sex is a category?
A. Yes.
Q. Grade is a category?
A. That's right.
Q. And there's other categories?
A. Yeah. The mink, whether it's mahogany or black.
Q. Or black. Okay. So does the product mix affect the market recovery?
A. It does.
Q. Okay. Now, did you understand that Dr. Roberts looked at it from a total market aggregate standpoint?
A. Yes.
Q. All right. Did you actually get down into those specific categories?
A. Yes.
Q. All right. Let me put up a couple of these. And I want to start with this one. And I know that the numbers in the yellow -- or the green and the red are blank. And tell me what we're showing over here. What's this column? This is another chart that you prepared; right?
A. Yes.
Q. Based on the data?
A. Another chart of stuff that you guys can't see, probably. What this is, this says, for instance, female

breeder. If it says black over here. What this is, these are all the categories that I told you about on the auction detail. So every single one of these is a different category of mink. Here's whether it's classified as mahogany, black or other. Here is the number that were sold in each of the years. So 2009, there were 59 of that top row sold. There were none of those sold in 2010, 2011. So all of this comes right off of the auction reports, and I just put it into my spread sheet, which this is a copy of. And then I looked, and I compared the price for every single one of these. I compared the price that they actually received for this to the average price, okay.

And so what we'll see in the next chart, these are zeros here because I wanted to show the example. But if it's green, it means that the plaintiffs actually received more money, a higher price than average. If it's red, they actually received a lower price than average. And so I wanted to be able to see, what I was expecting was if the crumlets caused lower quality and if the crumlets caused you to get lower prices than you used to get, it should be green -- these are 2009 and 2010. That's before there were any crumlets given. It should be green here and red over here. And so I wanted to see if it was green and red. So I prepared -- so the next slide I did actually has the numbers in there.

Q. Okay. So let's take a look at this. And tell us

what this is talking about.

A. So this is that same chart that you just saw, but now I've put in -- this is the actual price and this is the market price. All the data comes from that same auction sources. And you can see over here these are the boxes that are really -- really reflect the difference. So the red box again, so they got below market price. In 2009 before there were crumlets they got below market price, below market price. They've always gotten below market price for this one. But down here you can see that they got above market price for whatever that one is, and they've always gotten above market price for that one.

And so you can see when I looked at this, again, I was -- it doesn't look like what I was expecting it to look like because it doesn't look like the other chart where it was green and turning into red. Instead, they looked pretty random. But I looked further.

Q. Did you look at any particular categories of mink where the losses seemed to be centralized?

A. I did.

Q. And where did you see that?

A. I looked at two things to do that. So first I looked at the total. And the numbers, you can't see the numbers, but I don't know that the numbers are as important. This year, in 2009, they did sell for a little bit above

market. 2010, before the crumlets, they sold below market. And this year, this is the first year of the loss, or this is the year of the loss that Dr. Roberts counts, and that number, you can't see it, but that number says $62,000. So they were below $62,000, below market by 62. So then I looked up here, and another number you can't see is that one. That one says below by $61,000.

So all of these boxes offset each other except for that one, that 61,000. That's a big number. If you were looking at these numbers, if you could see these numbers more closely, you could see that's big number. I think the next closest one, this one right here is 17,000, negative 17,000. But 61 stands out from all the other numbers.

And so in 2011, the losses on this one, which they've never sold above market, is what he's counting as damages. And that's not how we're supposed to measure damages.

Q. Well, we can see that it's red all the way across. But was the number -- the amount of that loss in 2011 particularly pronounced in that category?

A. Yes. Yeah. This is red, 4,700; red, 17,000; red, 61,000; red, 8,800.

Q. So that's, what, about $47,000 -- or $44,000 more that one year?

A. Right.

Q. Did you determine why they suffered such a big loss on that?

A. I did.

Q. What was it?

A. If I look back over here, remember this is the quantity, so if I can line these up right. So what happened is they just sold a whole bunch of it. In 2011, they sold a whole bunch of them. These amounts are how many they sold. So in 2009, they sold 2,697. In 2010, they sold 3,450, and then in 2011, they sold 5,641. So they sold a whole bunch of mink that they had never sold for as much as market. And so that is what is causing this loss.

Q. The loss is magnified because the selling of more mink in one category?

A. More mink -- if you sell more of something that you have not sold at market, then it will bring your price down.

Q. And that's a mahogany -- what is that? Is that a mahogany male?

A. Yes.

Q. Okay. All right. Let's go back to our original discussion, then.

Now, let me ask you about -- you talked earlier about live sales and how some of the mink were not sold at auction but instead were sold to other farmers as breeders. Do you remember that testimony?

A. Yes.

Q. All right. What impact would the sale of those breeders live as opposed to the market have on the Jonssons' relationship to the market price?

A. Well, I believe -- let me tell you why I believe this. Breeders are sold at a higher price than the other ones. So the breeders, if you take out high-priced ones and they're not in the auction numbers that we looked at, your average price will be down. So by doing that, it cause -- it makes it look more like there's damages if you've pulled out high-priced breeders.

Q. And I think we saw that this morning from Dr. Roberts. He outlined what those averages are. So if the price that they're selling the mahoganies to their friends for is higher than what they're selling at the market for, then that will reduce their profitability vis-a-vis the market?

A. That's right. If you think of it, if we took the average height of the jury and then we asked all the tall people to step out and we took the average height again, the average would go down. And that's the same effect that pulling out the breeders would have on average price.

Q. Okay. Now, based on your calculations, then, how you did this assessment, did you believe that the Jonssons suffered a loss vis-a-vis the market?

A. No, I don't.

Q. Now, the third category is the breeder mink -- actually have we gone through these, all the red buttons that we wanted to talk about?

A. Yes. We've covered all of those.

Q. We're done with breeders?

A. Yes.

Q. Why don't you resume the witness stand, and we'll talk about something else.

A. Do I need to turn this off?

THE CLERK: I can take it.

THE WITNESS: Thank you.

Q. BY MR. MINNOCK: All right. Can you explain to the jury how you understand Dr. Roberts assessed breeder losses?

A. Yes. First I believe that his theory was that because there were some mink that were not born, some of those would have been breeders that didn't exist. And so instead, the plaintiff had to go buy breeders. And so what Dr. Roberts did was he found out how many breeders were bought, and then he multiplied that by $600. And the way he did that is first he multiplied it by $100, which is roughly what they paid for it, and then he multiplied it times $500, which he said he thinks a breeder is worth. And so he added -- basically he took those, took the breeders that he thinks were purchased times $600.

Q. Okay. And do you have criticisms of that approach?

A. I do.

Q. All right. Tell us what your criticisms are of that approach. Do you have more than one?

A. Yes.

Q. Tell us the first one.

A. The first one is, this ties into the earlier problems. If he's counted the number of missing mink incorrectly, then that affects this one. If there aren't missing mink, then there aren't breeders that weren't available. So if the plaintiff bought breeders, it's not because they were replacing any that weren't available, it's because they bought breeders. So his first is the problems we discussed earlier affect this calculation.

But the second one is, when you're measuring damages, you don't -- you measure how much the plaintiffs had to spend in order to get themselves in as best position as they could. So I understand they spent $100 for breeder. And so you pay them back the $100. You don't -- you don't pay $500 which has never been incurred for breeders. Those breeders have never been bought. And in my mind this would be the equivalent of if I had a car sitting out front and you hit my car, rather than just asking you to pay for the repairs, I ask you to pay for the repairs and other repairs that I didn't get and could have gotten and maybe be on another car. It's not -- it's not the damage number.

Q. Did the mink that the Jonssons sold live, do you assume as an accountant that the price that they charge is the actual price of those breeders -- is the value of those breeders?

A. Yes. I expect that -- I expected them to behave like prudent business people and charge the market price for it.

Q. So if they sold breeders to other ranchers for either 75 or $100 or $108, then you would expect that to represent the fair value of that mink?

A. That's right.

Q. Okay. And if they sold them for 500, they would be a $500 mink?

A. That's right.

Q. Okay. But in this case they never had any mink that they sold for $500?

A. That's my understanding, yes.

Q. What is your second criticism about the breeder analysis?

A. There were two. The first one was the way it tied in with the number of mink. The second one was how he valued the mink, valuing them at $600 instead of $100.

Q. Okay. Do you think that giving them a new $500 mink would constitute double counting?

A. It sure would, yes.

Q. Explain that to us.

A. Well, for a couple reasons. The mink -- the breeder mink lived for as much as, as long as three seasons, three years. And so you're replacing breeder mink as you go. And so the first way that it does is if there's damages the way that Dr. Roberts has measured, meaning there's mink that weren't born, kits that weren't born, or the pelt size is different, we've already measured that. And so when you get to the end of the third year, that cycle has already gone through. And so it's already been accounted for there.

But also when they went out and bought replacement mink, they now have the mink that they can say they wouldn't otherwise have. And so now they're back in that position. So if that's the case, if you buy a replacement mink and it's appropriate, then the damage number is the amount that it cost. But you can't then charge another $500 that was never incurred and never bought replacement mink.

Q. Well, what if the mink that they purchased, okay, the breeder mink that they purchased to fill their -- as their females breeders produced lower, how is that accounted for? Or is it already accounted for by Dr. Roberts in other categories?

A. Well, he didn't do his calculations specifically enough to see -- I don't believe it's calculated -- well, I don't believe he's accounted for it. He didn't do his damage

numbers specifically for me to see. But if the replacement breeders were, there's something wrong with them, then we should measure those and see how much is wrong with them and calculate that. And he didn't do that.

Q. All right. Based on your review of all of the documentation that were provided, were you able to determine whether the Jonssons suffered any loss in this case?

A. I have not seen evidence that, normal evidence that exist that they've suffered economic loss as a result of this. I have not seen that evidence.

Q. Do you have any additional opinions in this case?

A. No.

Q. All right. Thank you, sir. That's all the questions I have for you.

CROSS-EXAMINATION

BY MR. HANCEY:

Q. Good afternoon.

A. Good afternoon.

Q. Okay. Just to clarify, Mr. Hoffman, you have an accounting degree; correct?

A. Yes, sir.

Q. Okay. You do not have a degree in economics?

A. No.

Q. You're not an economist?

A. I'm not. That's right.

Q. Now, you stated I believe that you reviewed Dr. Roberts' April 2013 report in preparation for this trial and your opinions in this case; correct?

A. Yes.

Q. And you're aware that in Dr. Roberts' report he analyzed data, historical data from the Jonssons' ranches going all the way back to 2003, didn't he?

A. In certain parts, yes.

Q. Well, 2003 or 2004, in some instances 2001; right?

A. Certain data, yes.

Q. When that data was available back that far; correct?

A. I believe I took him at his word that that's when it was available.

Q. And in your report, you only considered two historic years prior to the feeding of the crumlets; correct?

A. That's true. My report my first -- I mean, my report responded to his first report. So you're comparing an apple to an orange.

Q. I'm comparing your testimony from today; right?

A. My testimony today only went back to financial -- or only went back for those years that were covered.

Q. You talked about this spreadsheet, didn't you?

A. Right.

Q. And this spreadsheet only talks about data going

back to 2009, doesn't it?

A. That's true.

Q. And that was one year before the feeding of the crumlets; correct?

A. That's true.

Q. You didn't consider in your analysis all of the historical data that was available to you going back to 2003; is that a fair statement?

A. No, I don't think that's a fair statement because --

Q. Did you ignore it, then, because it's not in your papers?

A. Let me finish the first one. I don't think that's a fair statement because I took the analysis -- that's the analysis that I did, was Dr. Roberts' first report, so I just brought in the same thing that I've always had. When he updated his and did additional years, I didn't update mine. He made the mistakes that I was talking about, as well. So you're comparing an apple to an orange.

Q. Okay. So you've had since April of 2013 at least to update your documentation to consider data going back another seven years, and you chose not to; isn't that true?

A. Yeah. He made the mistakes I said, so I didn't -- I didn't go further into them.

Q. Would you agree with me that when you're

considering damages one of the things that you need to consider is opportunity costs?

A. It can be.

Q. Do you know what an opportunity cost is?

A. Sure.

Q. Let me give you an example. I work somewhere that pays me $1,000 a week salary, okay, or wages, let's say, and I want to go on vacation to Hawaii, so I do. And I go for a week, and the vacation costs me $1,000 in hotel, car and other fun expenses, okay? Are you with me?

A. I am.

Q. Okay. That vacation cost me $2,000, didn't it?

A. Well, let's make sure we're on the same page.

Q. Let's make sure. $1,000 that I spent in Hawaii.

A. Right.

Q. Plus the $1,000 in wages I didn't earn because I wasn't working; right?

A. I assume that that's what you meant, and so then --

Q. And in that scenario I would be accurate; correct? The vacation cost me $2,000?

A. So the question is, would -- did it cost $2,000?

Q. Yes.

A. If you want to count that as opportunity costs and you're not salary, sure.

Q. I'm counting it as a loss. I lost $2,000 by going

on vacation, didn't I? I got to go on vacation, but I'm $2,000 out of pocket, aren't I?

A. Yeah. Not many people would call going on vacation to Hawaii a loss, but it would be fair, if it's weekly wages it would be fair to say that it was $2,000 total cost to go to Hawaii.

Q. And in this case, if the Jonssons were in a position at some point where they wanted to grow their herd but couldn't because of losses that they experienced internally and in addition to that they had to go outside and buy external mink, you would need to account for both sides of that coin to quantify losses, wouldn't you?

A. It's possible if they weren't able to do growth, that's a possible scenario, sure.

Q. And your expert report doesn't talk at all about the Jonssons' inability to grow as they wanted to and had historically, doesn't it?

A. Well, I don't know if that's quite accurate. The notion of growing, they can grow. If they're going to grow by not buying any mink, then you've got to look at that lost mink analysis, which I have looked at. And then when you consider the mink that were sold in the live auction, I guess your question assumes, I suppose, that they want to grow by more than the number of mink that they gave away. But it's possible. You could create a scenario. I expect you have

different evidence, but you could create a scenario like that, sure.

Q. Where you've got to account for both unrealized loss of growth and external purchases; correct?

A. You could create a scenario where you would want to account for that, sure.

Q. Okay. Now it's also true that when you're calculating economic damages it's important to look at the whole picture; right?

A. I think that's generally fair. I'm not sure -- I mean, but, yeah, I think that's generally fair.

Q. Well, for example, when you're trying to calculate damages, you can't just look at sales, for instance, in a vacuum because that wouldn't paint the whole picture, would it?

A. Well, it depends on what's damaged. You're better off to look at stuff in a vacuum depending on what's damaged. So, for instance, if I -- you know, if I had a case where we lost a salesperson, then absolutely I'd look at sales in a vacuum because I'd want to see the impact of the salesperson. So if you look at more stuff, you start getting noise in the data. So it depends on the scenario.

Q. Let me give you an example. Let's say that I own a business that sales widgets, okay?

A. Okay.

Q. And in 2013, I sold 1,000 widgets. Are you with me?

A. Sure.

Q. Okay. On December 31st, a fire destroys 100 widgets in my inventory.

A. Okay.

Q. And then in 2014, I managed to still sell 1,000 widgets for the year.

A. Okay.

Q. You wouldn't say in that scenario that I haven't been damaged; correct?

A. Well --

Q. The sales were the same, but have I still been damaged?

A. I'd say you lost -- I can't remember the number you said.

Q. My damages would be the 100 widgets that I lost; correct?

A. So if you're asking me to assume that you lost 100 widgets --

Q. Yes.

A. -- I'd say your damage was 100 widgets.

Q. Regardless of whether or not my sales in both years were the same or not; correct?

A. Yeah. For that -- for when you describe that type,

there would be no need to analyze sales in that scenario because the widgets that you lost would be burned in a fire. I mean, we'd have your inventory records.

Q. And if we expand on my hypothetical, fire destroys 100 widgets and so I go over to my competitor and buy 100 external widgets and bring them into my inventory and manage to sell 1,000 for 2014, I've still been damaged, haven't I?

A. That's a great hypothetical. You have, but only the cost that it took you to replace those widgets. You're out -- you went out and you bought the 100 widgets, so whatever you paid to do that, that's your damage.

Q. If the widgets are equivalent in value; correct? You're making a big assumption there, aren't you?

A. Well, I don't know what the value of a widget is, but I thought I was going with you.

Q. But that's an assumption you would have to make, is that the widgets that I went out and bought from somewhere else are the same in quality and other characteristics as the ones that were burned in the fire; is that right?

A. Yeah. It's perfect. If that's true, if they are the same quality, then you're made whole as soon as you get that replacement cost. If they're not the same quality, then what I'd expect is you take the sales price of the ones you bought and compare it to the sales price of the ones that you didn't buy and you show that they weren't the same quality,

and we would measure that. And that's exactly what should have been done in this case and it wasn't.

Q. If you crash into my $50,000 Mercedes --

A. Uh-huh (affirmative).

Q. -- big, big damage to the side of the car, it goes to the body shop, and you purchase a $10,000 Kia and give it to me, I'm not whole, am I?

A. I wouldn't think you're whole, no.

Q. And if you crashed into my Mercedes and it was in the shop and I don't have the use of a car, in order to make me at least somewhat whole, you would need to pay for a rental car so I can get around in the interim while my car is getting repaired; is that correct?

A. I think that's fair, yeah.

Q. And even though you paid for my rental car while my car is in the shop when the car repairs are finished, I get my Mercedes back, don't I?

A. Right.

Q. And now I'm whole; right?

A. I think so, yes. So again --

Q. And it's not double counting, is it, to account for the rental car in the interim and the Mercedes that I get back, is it?

A. It's not in your hypothetical. But the difference, and I wish that that was what Dr. Roberts had done. The

difference here is that the mink, unlike a Mercedes the mink are sold, they're pelted and they're sold. And so we've got an analysis that Dr. Roberts does that looks over the years and counts the mink as they're sold.

So the difference in your hypothetical is if you have a Mercedes that every week you sell or you destroy or you wreck and I run into it and I buy you a rental car for a week, I don't have to get you another Mercedes. You go through them.

Q. So you give me my rental car --

A. That's the problem with the hypothetical.

Q. I'm getting a benefit from the rental car, aren't I? I don't have to get the benefit that I got from the rental car in the interim period where my own car is not available to me because you wrecked it, I don't have to give that benefit back to you, do I?

A. I certainly wouldn't expect you to give the benefit back.

Q. Right.

A. If I wrecked the Mercedes I have to pay for the rental. But when it's done, you've been made whole. And so just like this, if there's mink that are lost and the plaintiffs replaced them by buying them, then that's the damage amount.

Q. In this case, any value that you get from the

replacement mink the Jonssons bought for that temporary period of time when those mink are alive is only partially replacing the production for the quality breeders they lost; right?

A. No. I don't think that's consistent with the data. That if you're asking me to assume that the replacement mink were somehow inferior --

Q. Yes.

A. -- I don't know. Nobody's tested that. But if they're not inferior, then once they get the replacement breeders, they have the breeders.

Q. Okay. But if you were to learn, sir, that the external mink the Jonssons did have to go out and purchase were markedly inferior to the ones they lost, your calculation would change, wouldn't it?

A. It might. I'd ask them two questions.

Q. Now, if the Jonssons lost mink, if they owned mink that died from eating the lactation crumlets, they've suffered losses, haven't they?

A. Maybe. It depends on -- I mean, I assume if they give it to a mink and a mink dies, I assume they pelted them. So if they pelted -- if they didn't, if they couldn't pelt them, then I'd say yes. If they pelted them and would have gotten a different price, then it would be the different price.

Q. The difference between -- well, if they lost 4,000

babies before they were bigger than my pinky, then they have to be compensated for that lost, don't they?

A. Yeah. If you're asking me to assume they lost 4,000 mink, then, I mean, it's back to the inventory analysis.

Q. That's like me losing the 100 widgets in the fire; right?

A. Yes. If you lost mink that just disappeared and didn't have any salvage value, then that's easy. You just value those mink and that's the loss.

Q. Likewise, if some of the Jonssons' mink were expected to produce five kit litters and as a result of eating the crumlets only produced litters of one kit, that difference would represent a loss to the Jonssons, wouldn't it?

A. Well, that's where it could. But again, that's where --

Q. It could or it would?

A. It could. I need to know a little more in your hypothetical. In this case, when we're looking at that assumption you've got to recognize the confidence interval. So you would say that the loss -- if that's true, the loss is the distance between how many should have been born and how many at the lower bound of that lot, that confidence interval. So I don't know -- in your hypothetical you didn't say what the confidence interval was.

Q. If the Jonssons had to harvest breeder mink

prematurely because those breeders' production wasn't what it was supposed to be and that stunted the growth of their mink operation, the Jonssons have suffered a loss, haven't they?

A. Well, if that's the hypothetical, that would be true. But that's different than the evidence that I've seen. So that hypothetical is not consistent with -- I mean, if that was true, then what I would have expected is Dr. Roberts to have said, here's the breeder mink that we lost, And here's how much it is. He didn't do that. Or I would have expected him to say, here's the breeder mink that were fed the crumlets that had too few kits. And he didn't do that. And so --

Q. Dr. Roberts did say in his report Jonssons lost 5900 mink in 2010. And as I understand your testimony, you're sitting there and saying the Jonssons didn't suffer any losses from losing almost 6,000 mink; is that correct? Is that what you're saying?

A. I'm saying there's no financial evidence of a loss. I don't know whether -- I'm not saying that the Jonssons aren't telling the truth. I'm saying that the records that were produced by Dr. Roberts don't show any loss. The records that Dr. Roberts analyzed to figure out whether there were mink not born or not showed different things than what the Jonssons have said, and that they don't support the notion of a loss. That's all I'm saying.

Q. If the Jonssons had to purchase outside mink to

replace breeders they lost, that would represent a damage to them, wouldn't it?

A. If the Jonssons lost -- if there are missing mink and as a result the Jonssons had to buy those, that's a loss. If the Jonssons bought mink but there weren't any missing, that's not a loss.

Q. One more thing. When you ran your calculations of no damage on the part of the Jonssons, you incorporated data in your analysis for the sales of mink that were not blacks and mahoganies; correct?

A. There is a small amount, I believe.

Q. Well, Dr. Roberts' calculation, you understand, is based on losses to blacks and mahoganies; right?

A. It is; except that those numbers I have tied directly into his. So his are based on the others to that extent, as well. It's a small amount, but those numbers tie to his report exactly.

Q. Okay. I appreciate your time today, Mr. Hoffman. I have no other questions.

THE COURT: Anything else for him?

MR. MINNOCK: Just one question.

REDIRECT EXAMINATION

BY MR. MINNOCK:

Q. You said earlier that in one category of loss that you would want to ask two questions.

A. Yes.

Q. What are the two questions?

A. I was asked if the Jonssons lost breeders and bought inferior breeders, is that a loss? And so then the questions I would have asked are, why would you sell breeders that same year? So if you're trying to grow your herd, why would you sell breeders and then buy inferior ones? Because that doesn't make sense to me as a businessman, so maybe there's a reason for that. And you'd need to know the answer to that to know if there's a loss because then the next question would be, well, how did the ones that you sold compare to the ones that you buy -- that you bought? So I suppose if you sold really, really bad ones and bought ones that were bad but not as bad as the ones you sold, we could maybe analyze something. But that's what I'd have to understand that I don't understand to be consistent with that hypothetical.

Q. Thank you. No more questions.

MR. HANCEY: Just one more.

RECROSS-EXAMINATION

BY MR. HANCEY:

Q. And one other possibility, Mr. Hoffman, would be if the Jonssons were trying to increase their black herd, therefore, selling mahoganies but buying black mink; correct?

A. That could be a motivation for selling the

mahoganies, but you wouldn't expect them to sell mahoganies in the same year that they're buying inferior ones and claiming it is a loss. It wouldn't properly be accounted as a loss. If I don't have enough mahoganies because I sold them, that's not a loss as opposed to if I don't have enough mahoganies because something happened to them and they weren't born.

MR. HANCEY: No other questions.

MR. MINNOCK: No questions. May this witness be excused?

THE COURT: I'm sorry? I didn't hear you.

MR. MINNOCK: May this witness be excused?

THE COURT: Any objection?

MR. HANCEY: No.

THE COURT: Thank you, sir. You may be excused. I appreciate your help.

Your next witness?

MR. MITCHELL: I think that's it for today.

MR. MINNOCK: I think our next witness is not due to arrive until morning.

THE COURT: Tomorrow.

MR. MINNOCK: Tomorrow morning.

THE COURT: Okay. Let's go home early. Be good to you. Remember what I told you. Don't talk about the case with anyone. We'll see you tomorrow at 20 after 9:00. We'll start at 9:30. Thank you.

(Whereupon, the jury left the court proceedings.)

THE COURT: Tell me what you've got tomorrow.

MR. MINNOCK: Actually for National Feeds we are resting. I think that Rangen has one additional witness, Jon Karraker.

And then do you want one potentially on Tuesday, or what you're thinking?

MR. MITCHELL: Right now, Your Honor, we're leaning toward calling our accountant tomorrow Jon Karraker and then resting. But we won't make that final decision until a little bit later this evening.

THE COURT: You both contemplate resting tomorrow?

MR. MITCHELL: Potentially, yes.

THE COURT: Okay. Let me mention a couple things that we can maybe talk about tomorrow depending on how long-winded your witnesses are. Plaintiff, of course, seeks damages against each of the defendants. There's a suggestion in the requests involving instructions that there ought to be some differentiation between the defendants. As I understand it, there's no action over amongst the defendants, that you're there in effect sitting on the same side. If there is a difference between the defendants, that may well make a difference in the nature of the requests and in the nature of the instructions. I don't know whether you're in the same tub or whether you're in different tubs.

MR. MINNOCK: Well, I think our -- you know, we've presented a common defense that we don't believe -- we've presented a common defense that we don't believe that they've suffered a loss. You've seen all that. In the event that there is fault, however, I think that we had contemplated in the special verdict having an apportionment done between Rangen and National Feeds.

THE COURT: If you're talking about differences, then the plaintiff needs to give some thought to what specific of the multitude of causes that you've alleged relate to any particular defendant. Some may be appropriate to both, but some may not be appropriate to both. I'm interested in making it as simple as possible for the factfinders to deal with the issues that exist. As I look at the materials, the materials, it seems to me that we all need to focus with some degree of specificity.

Now, let me ask maybe a question I shouldn't ask. Have you guys got an agreement or your clients got an agreement as to how to share a loss if there is a loss?

MR. MITCHELL: Not to my knowledge, Your Honor. There's at least nothing between either Joe or I have worked on.

THE COURT: Okay. Other than the addition of the footnotes in the requests that were submitted, among others the requests talk about punitive damages, if I remember

correctly. There's been no evidence here relating to punitives. I guess that request isn't an appropriate request.

MR. MITCHELL: We would agree, Your Honor.

MR. MINNOCK: We were contemplating to make a directed verdict on punitive damages.

THE COURT: I'm just trying to clarify things so that we don't spin our wheels. Think about your theories as against specific defendants so that you'll be in a position to articulate those if we have time tomorrow or Tuesday if it spills over. But as I understand it, no one contests the facts that there were hazardous materials in the feed.

MR. MITCHELL: No one is contesting that there were either histamines or nitrosamines in the feed.

THE COURT: In the feed. Okay. Now, in trying to simplify things for people, you only need one good theory. A half dozen theories often simply confuse these people.

MR. HANCEY: And that's why we framed our proposed verdict form the way we did. We didn't split it up amongst 19 different causes of action. We tried to simplify because we agree with what you just said.

THE COURT: More of commentary than anything else.

Now, these folks are going to be going home sometime tomorrow and coming back sometime on Tuesday. We're going to have to have an opportunity for an instruction conference, obviously. So what's your best guess on time on

finishing up your witnesses tomorrow?

MR. MITCHELL: I would -- Your Honor, I would say -- well, I don't know about any rebuttal that the plaintiffs might put on, but assuming we're only going to call Mr. Karraker tomorrow I would anticipate concluding somewhere around the morning break.

THE COURT: And he's your accountant?

MR. MITCHELL: Correct.

THE COURT: Okay. You guys don't estimate very well. You told me it would take two weeks.

MR. HANCEY: It was all Hans.

THE COURT: Okay. Thanks a lot.

MR. MINNOCK: Your Honor, one final thing. So I spent some time going through the jury instruction packet that we gave you. And many of the instructions dealt with issues that we set them up as pretrial jury instructions and post -- you know, post-evidence jury instructions. Do you want me to leave them as they are until we get through this jury instruction conference, or do you want us to get a head start by removing some of these ones at the outset?

THE COURT: Well, why don't you look through it and tell me the ones tomorrow which ones you withdraw.

MR. MINNOCK: Okay. I think we can do that.

THE COURT: That could be helpful for me. There was kind of a strange introductory paragraph, prior to the

introduction on both the original and the other where it says, National Feed submits the following memorandum in support of National Feed's motion in limine. Now you have the introduction.

MS. FLETCHER: Sorry, Your Honor. That would be my mistake. I did this at a late hour.

THE COURT: Well, I figured it was something that probably was in one of those automatic machines where you punched the number. But that's better than some things I've seen. When it comes to proofreading, for example, the pleadings from a high-priced firm back East, they were in here. They obviously hadn't proofed, and proofing is different than punching the spell checker. But it came out that when they were talking about public interest, it came out as pubic interest. So it pays the proof.

See you tomorrow. 9:30. Thanks a lot.

(Whereupon, the court proceedings were concluded.)

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STATE OF UTAH)
) ss.
COUNTY OF SALT LAKE)

I, KELLY BROWN HICKEN, do hereby certify that I am a certified court reporter for the State of Utah;

That as such reporter, I attended the hearing of the foregoing matter on January 16, 2014, and thereat reported in Stenotype all of the testimony and proceedings had, and caused said notes to be transcribed into typewriting; and the foregoing pages number from 673 through 796 constitute a full, true and correct report of the same.

That I am not of kin to any of the parties and have no interest in the outcome of the matter;

And hereby set my hand and seal, this ____ day of _____ 2014.

_____
KELLY BROWN HICKEN, CSR, RPR, RMR